

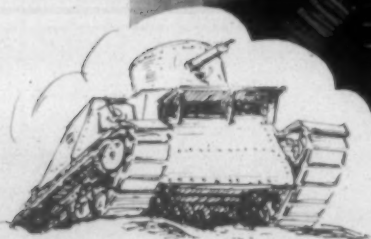
TEXTILE BULLETIN

VOL. 61

SEPTEMBER 1, 1941

NO. 1

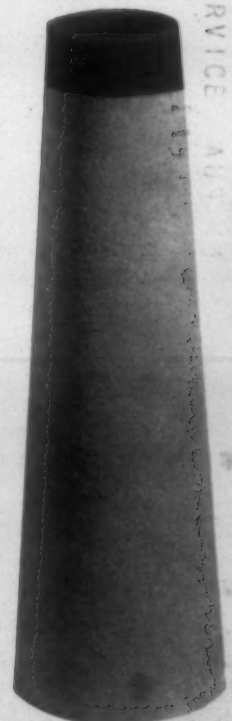
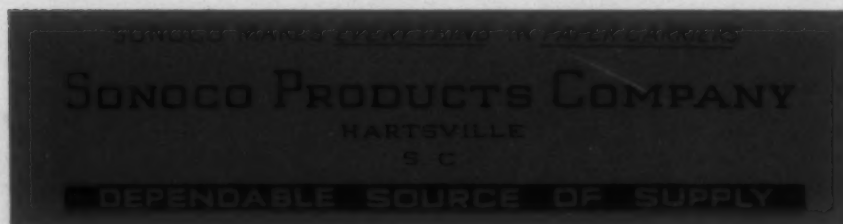
OUR FIRST LINE OF DEFENSE IS OUR PRODUCTION LINE



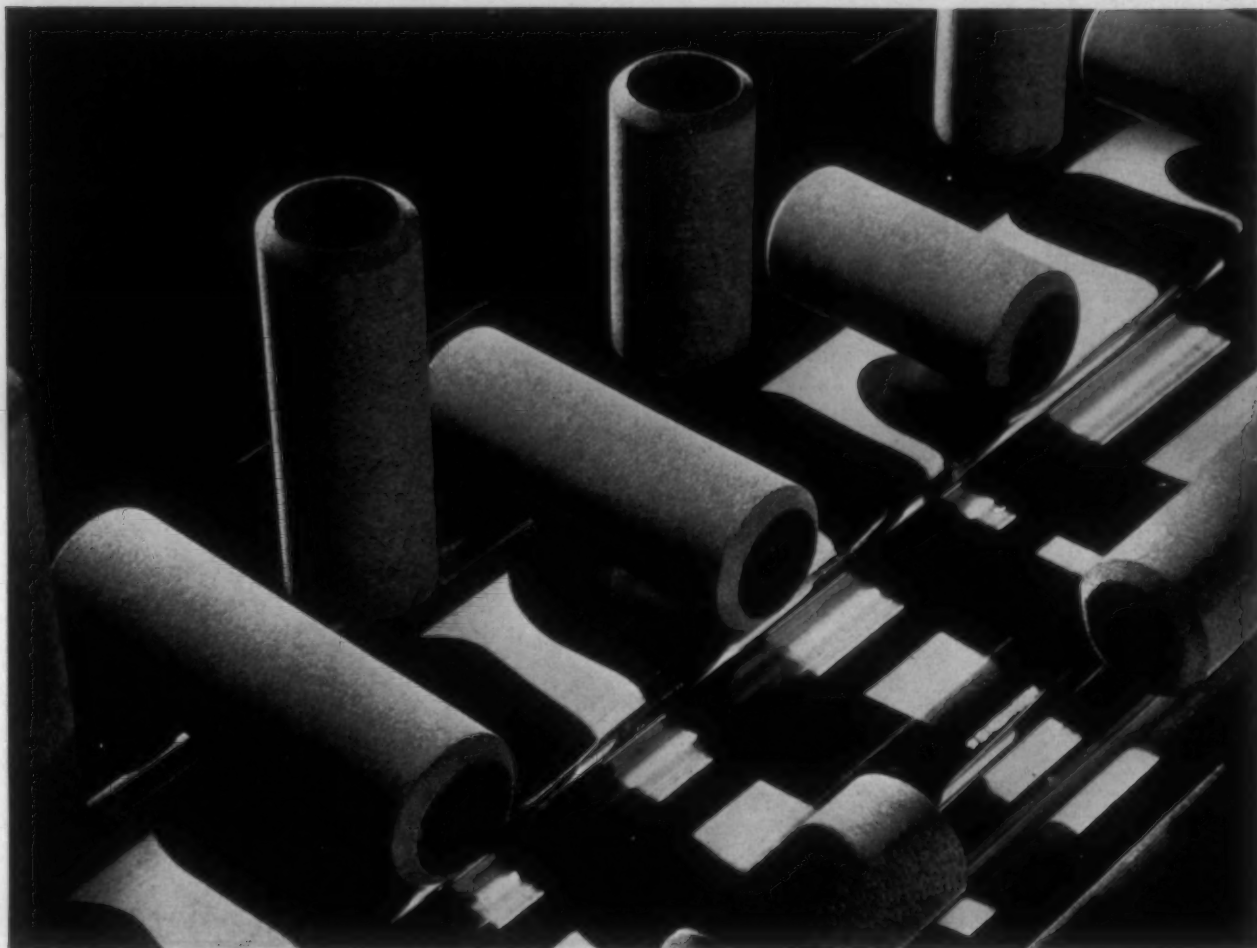
A strong national defense requires diligence and skill in production as well as courage and skill for combat.

The cost of our national defense must be paid for by the production and operations of non-war industry.

We must keep our production lines moving. The textile industry is doing just that—and Sonoco is doing the same thing . . . supplying dependable service on textile paper carriers.



INSTITUTE FOR RESEARCH
SOCIAL SERVICE
CHAPEL HILL N.C.



THE MILLS "ON TOP" ARE THE MILLS ON CORK

TODAY, with orders piled sky-high, the chief concern of America's textile mills is *maximum production*. It is no matter of chance that the vast majority of mills that are making outstanding production records today are spinning on cork. The physical properties of Armstrong's Cork Cots are enabling these mills to operate more than 8,500,000 spindles at top speed and efficiency—with little loss of production due to roll covering replacements and with better running work.

Five characteristics of cork account for its ability to spin a

stronger, more uniform product—for a longer time. Cork's high coefficient of friction produces uniform drafting with minimum slippage . . . drafts out bulky roving . . . eliminates eyebrowing. Cork's resilience enables it to "come back" after being grooved by top roll laps and hard ends. Cork's freedom from lateral flow helps maintain a truer drafting surface. Cork's resistance to liquid penetration prevents shrinking or stretching during humidity changes . . . cuts down damage from oil or dye absorption. Cork's durability means that these

cots retain their important advantages throughout long periods of service.

Top production demands top service—and "Armstrong Service" is ready to aid you through the complete facilities of our sales, research, and engineering departments. Our staff of trained textile specialists is always ready to work with you toward the solution of any operating problem. See your Armstrong representative or write to Armstrong Cork Co., Textile Products Section, 921 Arch Street, Lancaster, Pa.



ARMSTRONG'S Extra Cushion SEAMLESS CORK COTS

CORK PRODUCTS SINCE 1860

Published Semi-Monthly by Clark Publishing Company, 218 W. Morehead St., Charlotte, N. C. Subscription \$1.50 per year in advance. Entered as second-class mail matter March 2, 1911, at Postoffice, Charlotte, N. C., under Act of Congress, March 2, 1897.

Doctors Don't Guess

Why Should You?

It takes more than a superficial examination to find the strength and weakness of Unit Heaters, too.

You're buying **HEAT** not ornaments, so don't stop at the housings (they're all smartly styled). *Look inside . . .* that's where the differences show up—vital differences in performance under *actual working* conditions, as opposed to standard ratings under ideal conditions.

Outstanding among all Thermolier features is an efficient *Internal Cooling Leg*, integral with the unit. It removes condensate *continuously* instead of intermittently; keeps *all* of the heater working all the time; eliminates "air binding" and hammer; permits use of simple thermostatic trap and is equal in actual cooling effect to *more than 100 feet* of exterior cooling piping.

This one feature *alone* places Thermoliers ahead of all other unit heaters in heating efficiency. Send for complete Data Book explaining Thermolier features. Grinnell Company, Inc., Executive Offices, Providence, R. I. Branch offices in principal cities of the United States and Canada.

OTHER THERMOLIER ADVANTAGES:

1. *U-Shaped Tubes* eliminate expansion strains the simplest way . . . insure dependability.
2. *Positive Built-In Drainage*—every tube is pitched for complete drainage of condensate.
3. *Superior Fin Design*—square fins instead of round—24% more radiating surface. Patented collars need no solder for strength. Dirt collection is reduced to a minimum.

DeLuxe



Industrial

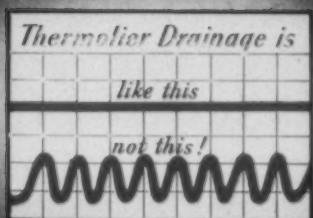
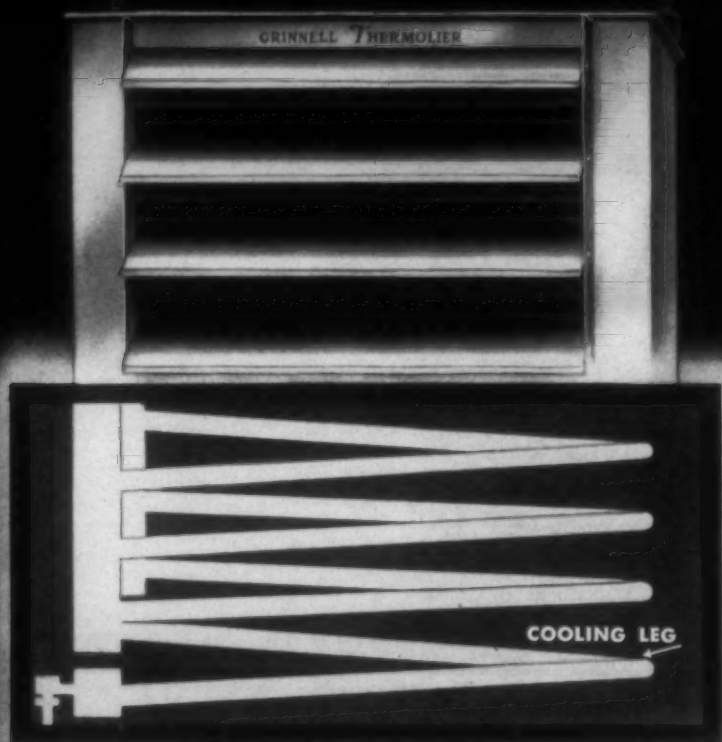


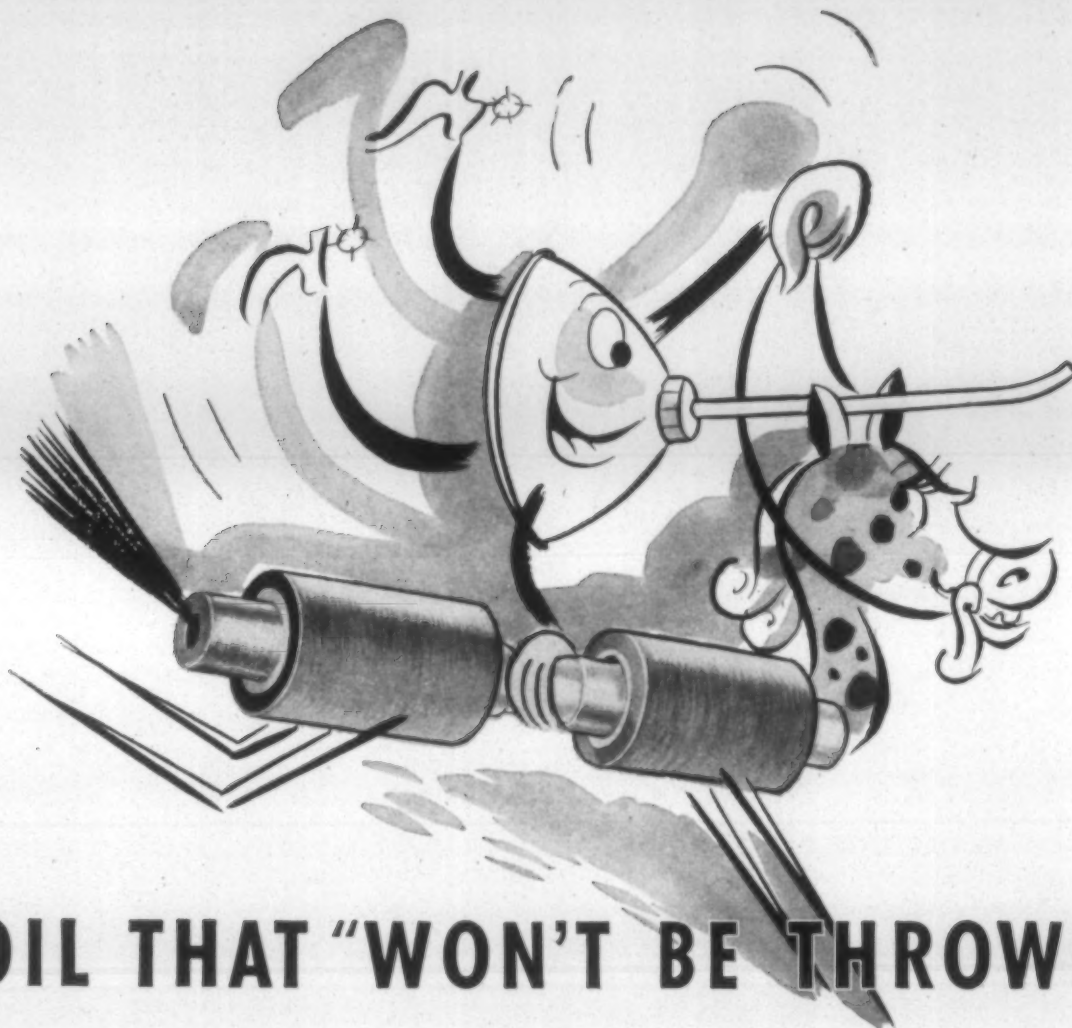
Factory



GRINNELL THERMOLIER

THE UNIT HEATER WITH 14 POINTS OF SUPERIORITY





OIL THAT "WON'T BE THROWN"

NEW freedom from spoilage due to oil-throw, fewer lubrications, lower maintenance costs. These are *proven* results of lubricating top-rolls, looms and other equipment with lubricants *that stay on*.

Scores of mills are enjoying higher output of spotless yardage . . . by lubricating with **TEXACO STAZON**.

Texaco Stazon stays on bearing surfaces . . . resists thinning out, creeping, splattering. It assures more efficient lubrication with fewer applications.

The outstanding performance that has made Texaco preferred in the fields listed in the panel has made it preferred also by textile mills everywhere.

These Texaco users enjoy many benefits that can also be yours. A Texaco Lubrication Engineer will gladly cooperate . . . just phone the nearest of more than 2300 Texaco distributing plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York, N. Y.

THEY PREFER TEXACO

★ More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

★ More locomotives and cars in the U. S. are lubricated with Texaco than with any other brand.

★ More revenue airline miles in the U.S. are flown with Texaco than with any other brand.

★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

TUNE IN: "Treasury Hour—Millions for Defense." All-Star Radio Program. Every Wednesday Night, CBS. 9:00 E.D.T., 8:00 E.S.T., 8:00 C.D.T., 7:00 C.S.T., 6:00 M.S.T., 5:00 P.S.T.

★ **RETURN METAL DRUMS PROMPTLY . . .** thus helping to make present supply meet industry's needs and releasing metal for National Defense. ★



TEXACO Lubricants

FOR THE TEXTILE INDUSTRY



Standards for Appearance of Cotton Yarn

By Malcolm E. Campbell, Senior Cotton Technologist

U. S. Department of Agriculture

Yarn Appearance and Its Importance

IN the sense in which it is used in the following discussion, the "appearance" of cotton yarn refers to the relative evenness, smoothness, and freedom from foreign matter of the yarn as noted by a visual examination of it. The color of the yarn, as affected either by the color of the raw cotton, by the construction of the yarn, or by the finishing processes, is not included in this somewhat specialized meaning.

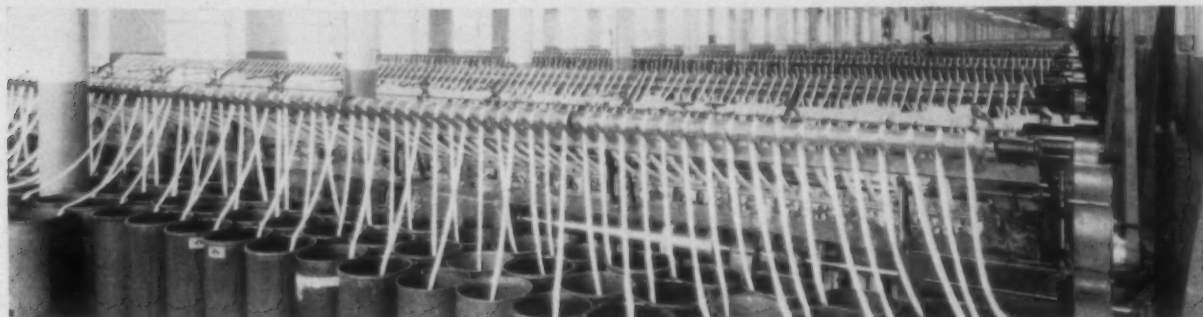
The importance of appearance as an element of yarn quality varies considerably, and depends mainly upon the use to which the manufactured goods are to be put. Generally speaking, the appearance of a cotton thread, cord, or fabric is influenced to a considerable degree by the appearance of the yarns from which it is made. In some types of cotton yarns, appearance is of little or no consequence. This is especially true of coarse bagging materials, osnaburgs, and the like. Even in tire cord, which must meet very rigid physical specifications in other respects, the question of appearance is relatively unimportant. A fairly rough but strong yarn would probably be preferred to a smooth, weak yarn for tire cord or for many other kinds of mechanical cords or fabrics.

On the other hand, there are some types of cotton goods in which appearance is very important, even to the

point of being the principal element of quality. Fabrics made from yarn of poor appearance will present an undesirable aspect, particularly when viewed against a light. For example, a light colored window shade against outdoor light would appear extremely cheap and undesirable if made of uneven, neppy yarns. Fine dress fabrics such as voiles, chiffons, and lawns must present a uniform, unclouded appearance, as must slightly heavier dress fabrics such as shirtings and broadcloths. It is particularly important that cotton knit goods be made of yarns of high quality, as material of this nature reflects yarn appearance to an even greater degree than do most woven fabrics. In sewing thread, thick-and-thin places or surface neps in the yarn may cause considerable trouble in machine sewing because of increased friction and the resulting tendency for thread breakage.

Factors Influencing Yarn Appearance

Many factors influence the appearance of cotton yarn. These factors are related to the quality of the cotton or to the care and skill used in the manufacturing processes. The smoothness of yarn varies with the number, kind, and size of neps in the raw cotton, upon the nature and extent of cleaning given the cotton at the mill, and upon the condition of the mill machinery. Evenness may be



803163

affected by the uniformity of the staple length of the cotton; but is more often a reflection of the efficiency of the drafting in the mill. Freedom from foreign matter in the yarn, of course, depends upon the type and quantity of foreign matter in the raw cotton, as well as upon the nature and degree of cleaning accorded the material in the preliminary spinning process.

To some extent, also, appearance is affected by the construction of the yarn. A soft-twisted yarn has a somewhat different appearance from a hard-twisted yarn of the same number spun from the same cotton. Moreover, imperfections, whether they are neps or particles of foreign matter, are more noticeable in fine than in coarse yarns. This is true for two reasons. First, in finer yarns the imperfections approach more nearly the diameter of the yarn. Second, it is usually the imperfections that lie on the surface of the yarn that affect the appearance, and in fine yarns the ratio of surface area to area of cross section is greater than in coarse yarns. Thus the imperfections are more apparent in the finer numbers.

Need for a Standardized Means of Evaluating Yarn Appearance

There is a need for a practical, rapid method of evaluating the appearance of cotton yarn, both in the field of testing and research and for commercial purposes. Some work has been done in laboratories, notably in England and Italy, on the development of apparatus for measuring one or more of the elements that affect the appearance of yarn. For the most part, however, the machines thus far developed fail to meet the needs under consideration, because they are slow to operate, the results are difficult to interpret, and not all of the elements, evenness, smoothness, and freedom from foreign matter are measured.

In the work of the spinning laboratories of the Agricultural Marketing Service, it was the practice for some years to wind the yarns of a particular test on blackboards, and to compare the specimens for appearance. This proved sufficient in many cases; in others, however, it became more and more apparent that a definite measure was needed, so that comparisons between tests could be made. Differences between varieties, and the effects of differences in growth, harvesting, ginning, and manufacturing methods are frequently reflected to a considerable extent in the appearance of the yarn spun from the cotton. Without some means of taking yarn appearance into consideration, in the case of cottons spun and tested at different times as well as within individual tests, the picture of spinning quality and utility was incomplete.

Commercial specifications for yarns always include the number or size of the yarn; usually, also, they include the word "carded" or "combed" to indicate the type of processing given the cotton, and possibly some term such as "American," "Peeler" or "Egyptian" to specify the growth of the cotton used. In some cases, particularly when the yarn is to be used for mechanical fabrics or for sewing thread, the strength of the yarn is specified, and, sometimes, the number of twists per inch which it shall contain. The type and size of package, and any particular finish desired, complete the specifications now in common use.

Until the development of the appearance standards described in this report, no means were available for including a specification of this element of quality. This gap

has been the cause of misunderstanding and controversies between buyer and seller, or even between overseers of spinning and weaving within one mill. The importance and value of having practical ways and means of standardizing cotton yarn appearance are therefore apparent.

Development of the Standards for Yarn Appearance

As previously mentioned, for several years test yarns have been wound on boards at the spinning laboratories of the Agricultural Marketing Service, to facilitate a visual examination of the appearance of the yarns. Many mills have also adopted this practice as a routine test of yarn quality control.

In 1937, the attention of the American Society for Testing Materials, through its Section on Cotton Yarns and Threads, Committee D-13 on Textiles, was focussed on the problem of developing ways and means of recognizing, evaluating, and standardizing cotton yarn appearance. A special committee was appointed to study the problem, with a member of the cotton spinning project of the Agricultural Marketing Service, United States Department of Agriculture, as chairman. An investigation was made of the available methods and equipment that had been developed in various textile laboratories for measuring the diameter of yarn. Although a number of devices had been constructed to measure the variation in the diameter of yarn along its length, none of these appeared to be sufficiently rapid and practical for the purpose which the committee had in mind. It was decided to attempt to set up visual standards for yarn appearance, covering the range of quality usually found, with which samples of yarn could be compared and classified.

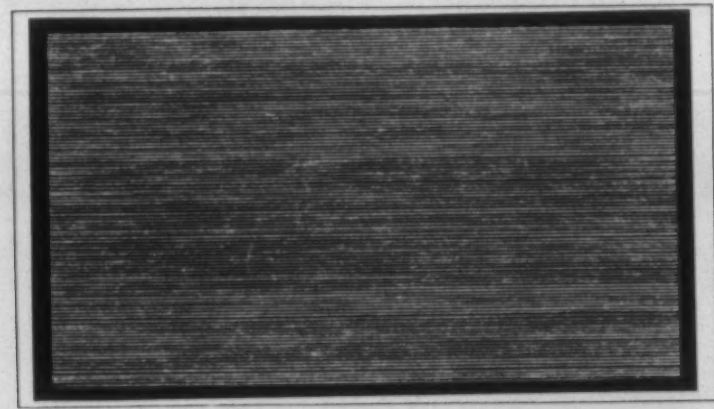
Several different types of winding machines have been available for some time, with the use of which yarn can be wound on drums or boards to facilitate an examination of the yarn with respect to its appearance. One such device had been used for a considerable period at the spinning laboratory of the Agricultural Marketing Service, and a collection of several hundred samples of yarn wound on small blackboards was on file there when the investigation of this problem was begun. This collection of yarn boards contained a wide range of quality of yarn of many different counts. It was decided to use this collection as a nucleus from which a number of samples could be drawn and used for standards.

A large number of commercial yarns were contributed by members of the committee. These were wound on boards at the spinning laboratory of the Agricultural Marketing Service, and used to supplement the samples already available there. Yarns of both carded and combed quality were included in the collection. Most of them had been spun with warp twist.

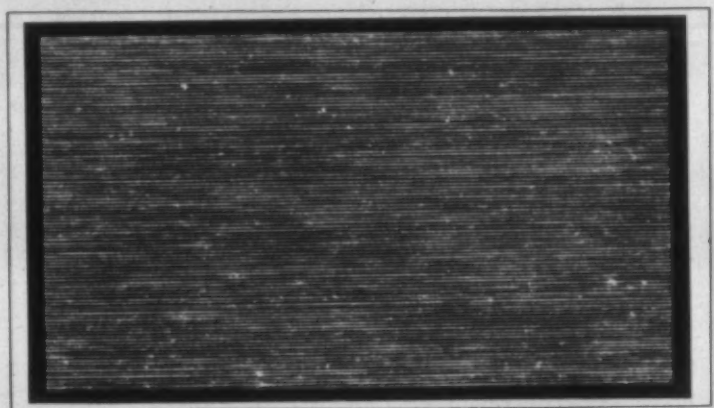
An examination of all of the yarns at the laboratory was then made, for the purpose of determining the best range and number of specimens to be selected for the standards. It was at once evident that several count groups would have to be selected, as it was feasible to compare yarns within only a limited range of count. The supply of specimens was therefore separated into five groups with respect to yarn count. A survey was made of the range of appearance within each group. Four specimens were then selected from each group to serve as

(Continued on Page 36)

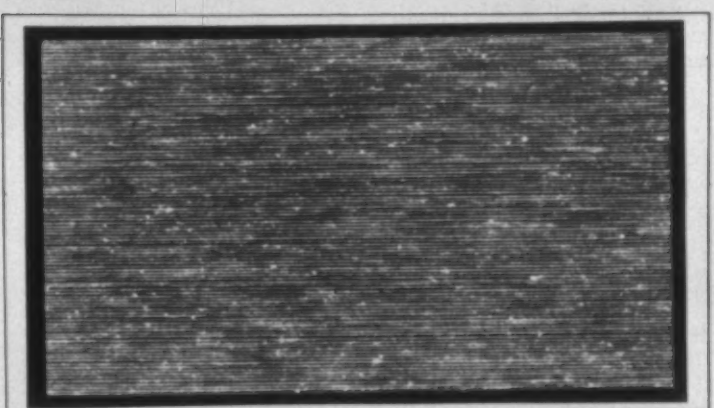
COTTON YARN APPEARANCE STANDARDS
 SERIES 2, FOR RANGE OF YARN COUNT
 7.0S TO 16.5S
 (WOUND 20 WRAPS PER INCH)



GRADE A



GRADE B



GRADE C



GRADE D

AMS

DEVELOPED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 WASHINGTON, D. C.
 (ADOPTED IN 1938 AS TENTATIVE STANDARDS BY THE AMERICAN SOCIETY FOR TESTING MATERIALS)

Processing Upland Cotton, $\frac{15}{16}$ To One Inch, With Staple Rayon and Wool

By B. W. Mitchell

(Continued from last issue)

Good Practice at the Drawing Frames

There are quite a few things that can happen around drawing frames that will make evenness in the work impossible, especially with individual deliveries. Our work was lumpy and very uneven and a good deal of the sliver was both heavy and light. We found that the very light work was due to the failure of the drawing frame to stop when a can ran out; also, the sliver would break back and leave only 5 ends running where there should be 6, which resulted in sliver in front $16 \frac{2}{3}$ per cent light. This was due largely to tight spoons that would not trip the stop motion.

The heavy work was found coming from a few individual deliveries, due to the top rolls not being weighted correctly at one or both ends, so that they failed to draw out the stock properly. The incorrect weighting was due mostly to the weight hooks or stirrups not being adjusted right. The lumpy work was coming from top rolls which had been in use a long time and were badly grooved. After correcting these irregularities, including getting the draft or tension right between the front and calender rolls, and adopting a system of cleaning, varnishing and lubricating the rolls each week, the work improved considerably. However, before we could get the tension right we had to change two of the compensating gears between the front and calender roll.

Speeds, Drafts and Trumpet Bores

The yards delivered per minute by the front roll=32.97.

$$\frac{3.1416 \times 1\frac{1}{8} \times 275}{36} = 32.97 \text{ yds.}$$

The draft between calender and front roll, 1.032; the draft between front roll and second roll, 2.341; the draft between second roll and third roll, 1.784; the draft between third roll and back roll, 1.253.

The trumpet bore for breaker drawing, $10/64''$; the trumpet bore for finisher drawing, $9/64''$.

Roll Settings

After experimenting with a few different settings of the rolls, which we believe is the only way of arriving at the correct setting, for the bulk of feed and different length staple, we adopted the following settings. Measured from

center of roll between front and second roll, $1\frac{1}{4}''$; between second and third roll, $1\frac{1}{2}''$; between third and back roll, $1\frac{3}{4}''$.

The settings are for 1-inch cotton, using 6 strands of 63-grain card sliver.

We run 10 to 15 different blends and mixes on the drawing very near all the time, and the same is true of the roving and spinning frames, which makes it very difficult to keep the weights right so as to have even tension and avoid stretch on the roving frames and unevenness in the yarns. To overcome this we have to have good performance of the picker evener, and carefulness on the part of the picker, card and drawing tenders, and we have to keep a close check on the weights and hanks per pound. This requires a great deal of sizing and weighing.

To start right, we allow only a half pound variation on the light side of the standard weight picker lap, and a half pound on the heavy side. The standard weight of the all-cotton lap being 40 pounds, we consider $39\frac{1}{2}$, 40 and $40\frac{1}{2}$ -pound laps good and set back all others. This is drawing the line close, but it is better to be on the safe side. The finisher drawing sliver is weighed twice daily, one yard from each delivery, which gives a fair average of the weight per yard of all the drawing going to the slubbers.

The quality of work (evenness in weight per yard) coming from the picker eveners is checked daily by taking the weight of the card sliver throughout the length of a standard weight lap, which requires about 60 weighings of card sliver—1 yard each weighing. We very often find something wrong with one of the eveners or the feed at the hopper feeder by using this system.

The only draft gears we change in the card room, to keep the weights and numbers right, is the crown gears on the finisher roving frames, and the tension gears on any of the frames that run too tight or slack. The bad work we get from the roving frames is mostly single, hard ends and some double, but we try to hold this at a minimum by having the bobbins marked when they are about $1/6$ full by one operative, not trusting it to the frame tender. The top rolls are cleaned each day and any cotton found on the steel rolls is picked off.

Spinning Synthetic Fibres and Wool Blended with Cotton

Spinning cotton yarns blended with wool and synthetic

(Continued on Page 33)

Churchill
said:

"Give us
the
tools...!"

In a stirring message directed to the people of the United States, England's Winston Churchill said, *"Give us the tools and we will finish the job!"*

That call for "tools" has echoed down the halls of industry all over America.

The Textile Industry says, "Give us the tools . . ." and that call is directed to us . . . to Whitin Machine Works and to the other textile machinery manufacturers.

The call is a strong one. It comes from a tremendous industry, the importance of which in the National

Defense Program is demonstrated by government orders for millions of dollars worth of fabrics, to fill widely diversified requirements of our armies, our navy, and our air corps.

We believe the maintenance of full production in the textile mills of America is of vital importance to the National Defense Program. We shall do our part to keep the mills in full production by supplying needed machinery and repair parts insofar as it is possible for us to secure the raw material with which we must work.

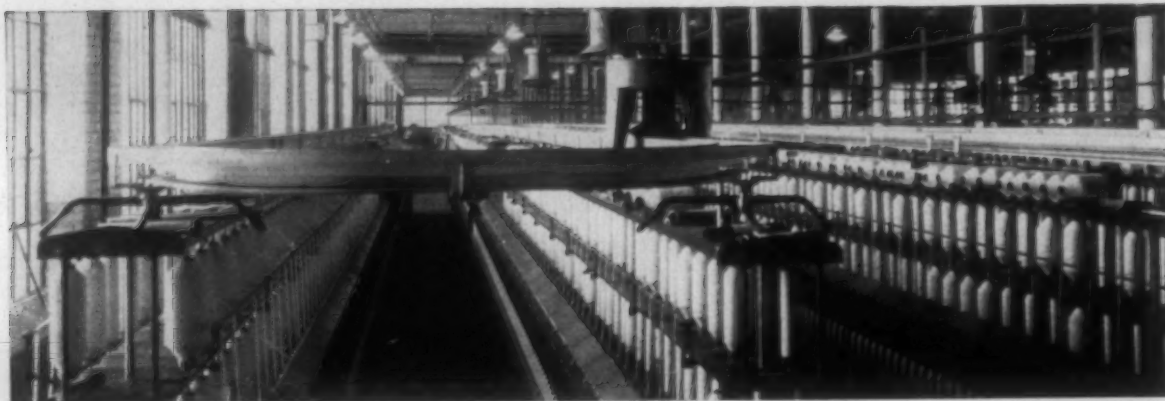
It is the desire of our Government that we should accept such direct defense orders as we are equipped to manufacture. It is also *our* desire and our *duty* to do so. We are already at work on marine-type steam engines and turbines, parts for torpedoes, assemblies for machine tool manufacturers, and crank cases for airplane engines. We expect to become continuously engaged in more of this type of work during the present emergency.

But we shall not forget that we are manufacturers of textile machinery and of the parts required to keep that machinery at maximum operating efficiency.

It is a time for careful planning, sound judgement, and the subordination of personal desires. So far as the government directs, we shall control our production so that we may continue to be able to say to the Textile Industry, *"Here are the tools!"*

Whitin
Machine
Works

Whitinsville
Mass., U. S. A.
Charlotte, N. C.
Atlanta, Ga.



Planning Ahead in the Spinning Room

By T. C. Brockleman

THE supervision of a spinning room under present conditions is not any different from supervision under normal operations—it's only more and faster. Most mills are operating longer hours now than at any time in recent years, and because of this the overseers and second hands must plan their work further in advance, and must fit it in with the operating schedule.

One thing that the overseer must keep in mind when planning for the future is the fact that supplies are slower in being shipped, and this condition is going to get worse rather than better. Mills can still get supplies, but they can't just call up the supplier and get shipment the same day, so they must anticipate their needs further ahead than has been their habit. All of the supply houses are pushed with orders, and most of them are having trouble filling them, due to trouble in getting raw material, workers being drafted or going into other defense work, and the difficulty of quickly training new workers for specialty jobs.

The spinning room overseer must particularly plan ahead for his requirements in such items as travelers, rings, spindles, bolsters, thread guides, and other metal articles. With most metals under priority control, the suppliers are going to find it increasingly difficult to obtain the proper materials for the manufacture of such items, and if they can't get the raw materials the mills certainly can't get the finished product.

While I don't think there will develop any serious shortage of travelers, since the traveler companies harden their own steel after the traveler is formed, it may be necessary in many cases to use a traveler that is not just the very thing you would like to have. The traveler companies are being called upon to furnish the industry with a tremendous volume of this important item, and they may not have in stock just what you order. In this case, you will probably have to get along with the nearest thing they have, providing you have not anticipated your needs and placed your order in plenty of time to wait for a delayed order. If you need a 20/0 traveler with a 9/16

circle for what you consider best results, you may have to get along with an 18/0 traveler with a $\frac{5}{8}$ circle, unless you have looked far enough into the future and placed your order for the traveler you want.

The shortage of supplies is going to place a premium on overseers who make it a point to make existing supplies last as long as they should, or longer. It is going to call for closer supervision of condition of equipment, better oiling, more frequent overhauling. It is going to force the overseer to watch closer the minor points of his job, things that he would ordinarily pass up as being of little importance.

I don't know whether there is a shortage of steel rollers for spinning frames or not, but I do know that the spinning room overseer can do a lot to prevent such a shortage. Steel rollers wear out at the necks, the points where the rollers contact the stands, and the reason why most of these rollers wear out is because the frames are not properly leveled and aligned. With an increase in running time, this important job must be particularly watched, because a frame that is out of level and alignment will wear out the steel rollers at an alarming rate. It is cheaper to take a frame out of production for a day or two to see that it is properly set up than it is to take a chance on ruining a set of rollers and stands by letting it run on.

One system that I have found most effective in normal times, and which should be more so now, is that of having the section men make a periodic inspection and report of certain phases of their job. For instance, on one day I would have the section men report on the condition of the thread guides on their job, whether they were grooved or showed signs of wear, all the same distance from the thread board, etc. On successive days they would report on the traverse motion, roving rods, wobbly cylinders, slack bands, tight or loose belts, vibrating ring rails, lifter rod bearings, etc.

If section men are required to make a written report

(Continued on Page 38)

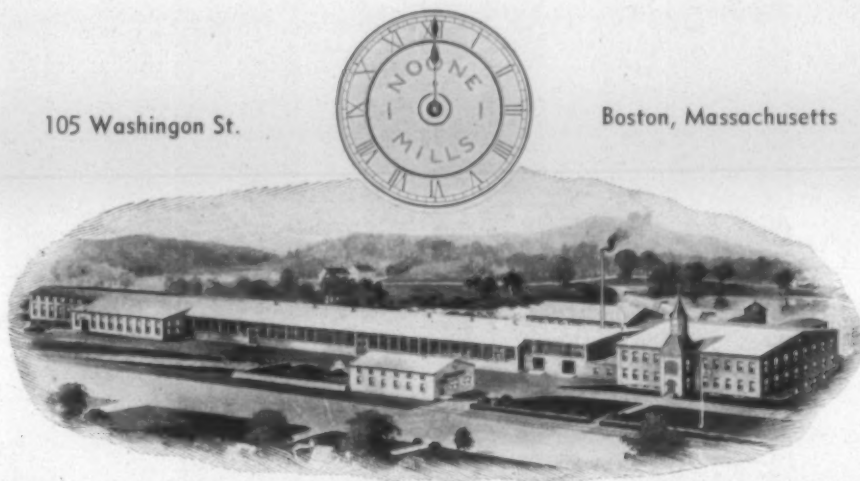
WILLIAM R. NOONE & COMPANY

A. ERLAND GOYETTE, President

ARNOLD T. MALONE, Treasurer

105 Washington St.

Boston, Massachusetts



Established 1831

Noone's Standard Slasher Cloths

Ask for NOONE'S SLASHER CLOTHS by name or style number.

Long experience in manufacturing Slasher Cloths and continuous experimenting have enabled us to produce several types of Slasher Cloth, each especially constructed to give best results on the particular kind of yarn to be sized.

The proper Slasher Cloth for each type of yarn means properly sized warps, less loom stops, easier weaving, more and better production, and lower cost. We can supply you the right cloth for your particular work.

On request, we will have our representative call and discuss Slasher Cloths with you.

We are the oldest manufacturers of Slasher Cloth in America. Our experience enables us to build a Slasher Cloth that will meet your most particular demand. Use NOONE'S SLASHER CLOTHS and be convinced.

Sole Agents For

The Joseph Noone's Sons Company

Peterborough

New Hampshire

Use Noone's Roller Cloths, Noone's Slasher Cloths, Noone's Clearer Cloths

Plans Progressing for National A. A. T. C. C. Meet in Pinehurst

Golf and tennis tournaments will be highlights in the sports program at Pinehurst, N. C., during the annual national convention of the American Association of Textile Chemists and Colorists' meeting, October 31st-November 1st. It is expected that approximately 700 members of the Association will attend, many of whom will participate in the golf and tennis tournaments, which are planned for Saturday afternoon, November 1st.

J. D. Sandridge, of the E. I. duPont de Nemours & Co., Inc., Charlotte, N. C., has been appointed chairman of the golf and tennis committee.

Golf Tournament

Mr. Sandridge and his committee are planning a most interesting golf tournament on one of three beautiful Donald Ross courses at Pinehurst. Suitable and elaborate prizes for the golf tournament are being provided, and an opportunity will be given for enthusiasts of this sport to compete. Members of the A. A. T. C. C. and guests will be allowed the reduced green fee of \$1.50 for the convention dates.

Tennis Tournament

Mr. Sandridge is also in charge of the tennis tournament, which will be featured if there are ten or more contestants. Those interested should write J. D. Sandridge, 412 S. Church St., Charlotte, N. C., if they wish to enter the tennis tournament, so that sufficient and suitable prizes for this event may be selected. Extensive preparations are being made for the various athletic events at Pinehurst, the sports paradise of the South.

Skeet Contest

J. E. Moore, Calco Chemical Co., Charlotte, N. C., is chairman of the skeet committee, which will attract the sharp-shooting members of the Association. Bring your gun and compete for the prizes which are being offered in this event. Notify J. E. Moore, Calco Chemical Co., Wilkinson Blvd., Charlotte, N. C., if you want to enter this event, so that plans may be completed for the skeet shoot.

Domestic Consumption of Raw Cotton At New High for July and 12 months

The Bureau of the Census reported that domestic consumption of cotton in July amounted to 928,943 running bales, a new record high for any month. The previous high mark was set in April of this year, when 920,000 bales were consumed. The Bureau's figures also showed that consumption in the twelve months ended on July 31st amounted to 9,718,220 bales, also a new record, compared with 7,950,000 in the 1936-1937 season.

The figures compare with 875,137 bales consumed in June of this year and 622,723 in July, 1940. Consumption in the twelve months to July, 1940, was 7,783,774 bales.

Stocks of cotton in consuming establishments at the end of July were placed at 1,874,187 bales and in public

storage at compresses, 9,704,095 bales, compared, respectively, with 1,918,335 and 10,570,235 at the end of June and 972,353 and 921,817 at the end of July, 1940.

Cotton Spinning in July At 123% Capacity

Washington, D. C.—The Census Bureau reported that the cotton spinning industry operated during July at 123.0 per cent of capacity, on a two-shift, 80-hour-week basis, compared with 121.5 per cent during June this year and 86.6 per cent during July last year.

Spinning spindles in place July 31st totaled 24,338,750, of which 23,027,818 were active at some time during the month, compared with 24,326,162 and 22,991,546 for June this year, and 24,747,636 and 21,916,700 for July last year.

Spinning spindles in place July 31st included: in cotton-growing States, 17,989,962, of which 17,381,470 were active at some time during the month, compared with 17,970,354 and 17,344,526 for June this year, and 18,134,482 and 16,730,456 for July last year; and in New England States, 5,636,700, of which 5,012,194 were active, compared with 5,643,660 and 5,026,140, and 5,884,114 and 4,581,762.

Active spindle hours for July included: in cotton-growing States, 8,386,247, or an average of 466 hours per spindle in place, compared with 7,863,817,200 and 438 for June this year, and 5,995,462,101 and 331 for July last year; and in New England States, 1,938,716,241, or an average of 344, compared with 1,862,420,381 and 330, and 1,394,155,348 and 237.

Active spindle hours and the average per spindle in place, by States, for June were:

Alabama, 857,301,151 and 476; Connecticut, 156,430,003 and 297; Georgia, 1,489,134,316 and 473; Maine, 247,432,193 and 377; Massachusetts, 1,076,883,317 and 340; Mississippi, 61,195,974 and 403; New Hampshire, 115,342,396 and 410; New York, 105,667,170 and 324; North Carolina, 2,596,280,419 and 449; Rhode Island, 324,532,716 and 358; South Carolina, 2,677,839,388 and 489; Tennessee, 269,735,954 and 488; Texas, 107,997,155 and 445; Virginia, 270,154,318 and 421; all other States, 180,782,309 and 267.

Committees Appointed for Carolina Yarn Association Meeting

The following committees, as reported by G. R. Hope, president, have been appointed for the annual yarn tournament of the Carolina Yarn Association to be held at Pinehurst the latter part of October:

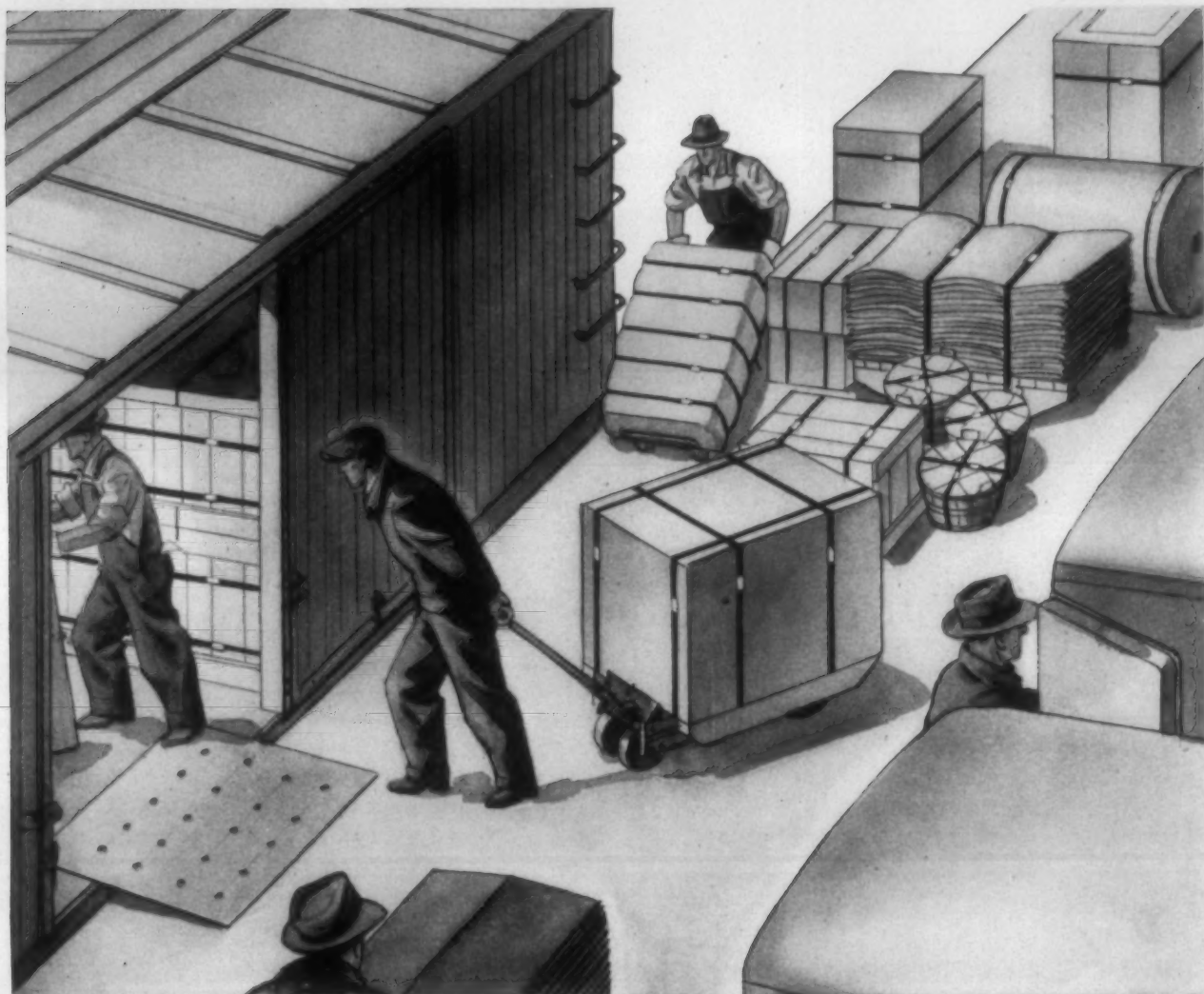
Entertainment—John Sherrill, chairman, Jim McDowell, Ray Weaver.

Golf—Bob Baker, chairman, Darden Hampton, Fred Lemmond, Sam Diggle, Bill Yates.

Prize—Joe Foil, chairman, Net Murphy, Pat Raiford.

Invitation—Frank Love, chairman, Walter Brown, Jim Furr.

Skeet—Bill Dodson, chairman, Joe Mason, Joe Ballentine.



ACME Products Facilitate the Carriers' "Full Loading Program"

● Reducing loading and unloading time . . . releasing freight cars sooner . . . utilizing the maximum amount of loading space and capacity are duties which every shipper and receiver must observe if the nation's transportation systems are to meet the tremendous demands now being placed upon them.

Hence, Acme Steel products are continually assuming more important roles in the defense program . . . for Acme Unit-Load Bands (for bracing every type of product

in freight cars) and Acme Steelstrap (for reinforcing individual shipping packs) permit safe capacity loading . . . reduce tare weight . . . simplify unloading . . . release cars faster for other needs. Thus carload, pool car and l.c.l. loadings . . . bundles, cartons, bales, boxes and skid-loads . . . parallel the acceleration of increased production.

Cooperation with the carriers is essential to the defense effort because *No Product Is A Defense Product Until It Reaches Its Final Destination . . . Quickly and Safely.*



ACME STEEL COMPANY

2827 ARCHER AVENUE, CHICAGO, ILLINOIS

Rayon Cloth Deliveries Drop During July

The National Rayon Weavers Association, Inc., reports that the monthly index of deliveries of filament yarn fabrics, developed from compilations of the operations of manufacturers reporting to it, is 164. This compares with 174 for June and 116 for July last year.

"The index of deliveries of filament rayon cloth to the consuming trade in July, 1941, is somewhat smaller than in June of the same year, but very much above that for July, 1940," states the association. The reason for the slight decline in July of 1941 from the preceding month is largely due to the shutdown over the July 4th holiday, at which time it is the custom for a number of Northern mills to close for inventory purposes.

"There was also a certain number of looms closed down in July, owing to the inability of manufacturers to secure the rayon yarn necessary to run them. Consequently, production was somewhat less in July than in June, but the ratio of billings to production showed a further inroad into manufacturers' stocks of greige goods.

"The market was active during the first two weeks of the month, but was dislocated after the discussion of ceiling prices on July 16th, trade being confined largely to sales from second hands. Business in the primary market was virtually at a standstill as the month closed."

\$500,000 To Promote Cotton Use

Formal announcement that a sum of from \$500,000 to \$600,000 will be available for use in a cotton promotion program was made in Charlotte after a meeting of the Board of Government of the American Cotton Manufacturers' Association.

The announcement marked the culmination of a campaign in which efforts were made to assure that five cents a bale would be contributed to this program for 90 per cent of the cotton used in the crop year which ended on August 1st. Officials of the drive announced a few days before August 1st that they had the goal in sight.

The meeting was presided over by W. N. Banks, of Grantville, Ga., president of the Association. W. M. McLaurine, secretary and treasurer, said in discussing the end of the drive for support of the promotion program that 426 textile mills had signed the five-cents-a-bale agreement. There were 85 mills which did not sign because they use all compressed cotton which was taken care of by the cotton shippers.

The few using uncompressed cotton and not signing the agreement are estimated to have used about 318,000 bales of cotton last year. Mr. McLaurine pointed out that this was a small amount of the total amount of flat cotton used which was estimated at 3,330,000 bales.

The cotton shippers' agreements took care of some more than 90 per cent of the cotton they use and by averaging that with the percentage signed up by the spinners, it is seen that more than 91 per cent of the cotton consumed last year will participate in the agreement.

Two outstanding characteristics of the campaign are that this is the first time in history that 90 per cent of the industry has been definitely signed up on any proposition and is the first time the entire industry has made an

unusual effort at promotional activities or in research.

Every branch of the cotton industry is included in the program, the ginner, the warehousemen, the compressers, the farmers, the spinners, and the merchants. Through this campaign, the Cotton-Textile Institute and the National Cotton Council will have a sum of money which is expected to lay the groundwork for great benefit to the industry when the present conditions in which the industry is working are over. While the industry is finding a greater demand than it can fill for its products today, it is hoped that the results of the promotion and research program will soften the impact when the Government demand is finished and will cushion any serious slack in demand which might take place.

All of the money will be spent on the domestic fields and the domestic market for the cotton growers as well as the spinners. This is the first time the spinners and the growers have been united in a program for the welfare of both and both groups are pleased at its success, Mr. McLaurine said.

Cotton Carryover Is 12,203,282 Bales

Washington, D. C.—A cotton carryover of 12,203,282 bales was announced August 15th by the Bureau of Census, Department of Commerce, in the annual preliminary report showing supply and distribution of domestic and foreign cotton in the United States' season of 1940-1941. This carryover compares with 10,564,170 bales in 1940.

Details of the report follow:

I. Cotton ginned, imported, exported, consumed and destroyed in the United States for the 12 months ended July 31, 1941:

Ginnings, from August 1, 1940, to July 31, 1941, 12,267,752 bales; net imports, 191,835 bales; net exports, 1,082,262 bales; consumed, 9,718,220 bales; destroyed (baled cotton), 70,000 bales.

II. Stocks of cotton in the United States, July 31, 1940 and 1941:

In consuming establishments, 1,874,187 bales in 1941 and 972,353 bales in 1940; in public storages and at compresses, 9,704,095 bales in 1941 and 9,121,817 bales in 1940; elsewhere (partially estimated), 625,000 bales in 1941 and 470,000 bales in 1940. Total are 12,203,282 bales in 1941 and 10,564,170 bales in 1940.

III. Supply and distribution of domestic and foreign cotton in the United States for the 12 months ended July 31, 1941:

Stocks on hand, August 1, 1940, total, 10,564,170 bales, as follows: In consuming establishments, 972,353 bales; in public storages and at compresses, 9,121,817 bales, and elsewhere (partially estimated), 470,000 bales.

Net imports (total less 1,036 bales re-exports) amount to 191,835 bales.

Ginnings during 12 months, total, 12,267,752 bales, as follows: Crop of 1940 after July 31, 1940, 12,265,783 bales, and crop of 1941 to August 1, 1941, 1,969 bales.

The aggregate supply totals 23,023,757 bales.

Net exports (total less 1,243 bales of reimports) amount to 1,082,262 bales; consumed, 9,718,220 bales; destroyed (baled cotton), 70,000 bales.

TELEPHONE 729 WORKS: N. MARIETTA ST.

**BARKLEY
MACHINE WORKS**
MANUFACTURERS OF
TEXTILE MACHINERY
PARTS

GASTONIA,

NORTH CAROLINA



**Doing the ordinary job
a little better**



is what makes the boss keep you in
mind when he has an opening higher up.

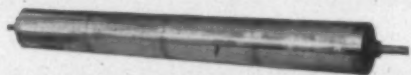
If spinning is your job, you can show improvements
with Victor Travelers that will make the most hard-boiled
superintendents' eyes light up.

Experiment at our expense. Write today for FREE
samples.

VICTOR RING TRAVELER COMPANY

1733 Inverness Ave., N.E.
Atlanta, Ga.
Tel. Vernon 2330

173 W. Franklin Ave.
Gastonia, N. C.
Tel 247



Manufacturers and Builders of

Spinning Cylinders, Card Screens, Conveyor
Pipe, Lap Aprons, Silver Pans, Aspirators,
Waste Chute Boxes, Gear Guards, Slasher
Work, General Textile Sheet Metal Work.

JENKINS METAL SHOP

Gastonia, N. C.

ESTABLISHED 1912

**HAVE YOU TRIED WALKER
HEDDLES?**

Walker Manufacturing Co., Inc.

Ruth and Atlantic Streets
Philadelphia, Pa.

Southern Office: 11 Perry Road
Greenville, S. C.

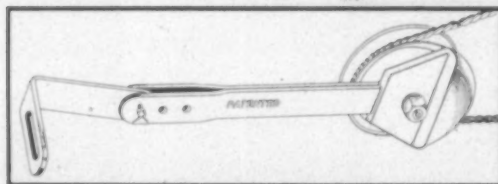
R. T. OSTEEN, Representative

"SH-H-H!"

—these sketches

tell a secret of

SAVINGS"



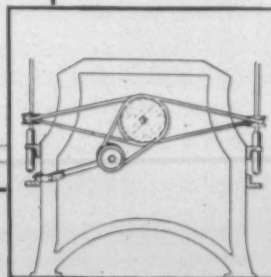
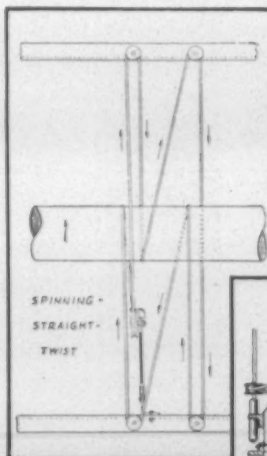
It's a secret scores of cost-conscious mill executives and overseers already have discovered—that it is possible to get a uniform spindle speed and higher quality yarn on their old frames without having to buy new tape drives. How?—with the installation of Meadows Tension Pulleys.

These sturdily built pulleys are equipped exclusively with M-R-C Lubri-Seal Ball Bearings, fully protected against dirt and lint. Ease of installation is shown in lower diagram—only one hole need be drilled through spindle ladder on bottom rail to install one pulley for every four spindles.

Prelubricated and guaranteed for one year, Meadows Tension Pulleys insure (1) Uniform spindle

speed . . . uniform twist at all times, (2) No soft or slack yarn due to band slippage, (3) No more damp weather or dry weather or Monday morning band trouble, (4) Lubrication necessary only once a year, (5) No doffing of frames necessary for installation.

Write for details. Demonstration with stroboscopic readings at no obligation.



**MEADOWS
MANUFACTURING COMPANY**

Post Office Box 4354—ATLANTA, GEORGIA

Mill News

MARION, N. C.—The Overlook Knitting Mill has been established on Ellis Street by W. P. Elliott. The mill will have 25 machines on half hose.

MORTIMER, N. C.—The plans for a full-fashioned hosiery mill at Mortimer have been abandoned. The machinery which was moved here has been moved away.

MONROE, N. C.—The Monroe Full Fashioned Hosiery Mill is now owned by the Pilot Life Insurance Co. of Greensboro, N. C., having been acquired under mortgage as the result of liquidation sale. Plans are being considered for sale of the property.

MEMPHIS, TENN.—The American Finishing Co., of this city, has announced plans for the construction of a one-story addition, which will represent a cost of approximately \$45,000. The plans for the addition were prepared by E. L. Harrison, local architect.

OPP, ALA.—The Opp and Micolas Cotton Mills are constructing a modern, up-to-date office building, of brick and concrete. There will be a reception room, work room, an office for Secretary Lyons, Mr. Channell, general superintendent; Mr. Mizell, president, and W. O. Ruffin, superintendent. This building will be air conditioned throughout. J. T. Clark is the contractor.

DALTON, GA.—The Dalton plant of Redwine & Strain, manufacturers of chenille bedspreads and other chenille products, is nearing completion on Fifth Avenue and will begin operations soon, giving employment to close to 500 local people.

The Chatsworth and Hill City plants of Redwine & Strain have been combined and moved to Dalton, giving this city another large bedspread company. The Redwine & Strain plant will be housed in a modern fireproof brick building.

GREENVILLE, S. C.—Renovation of houses at Brandon and Woodside is continuing.

Workers are rapidly progressing at Woodside. Already repairs on approximately 100 houses have been completed or are almost completed.

Work of repairing both the exterior and interior is being done by the workers. At Woodside the exteriors are being repainted and those houses which were not renovated inside last summer during a short program are having the interiors refinished.

New walls are being installed and painted.

Similar work is being done at Brandon.

PACOLET, S. C.—Pacolet Mfg. Co., manufacturers of sheetings, drills and twills, reports for the year ended

March 31, 1941, net profit of \$479,606 after depreciation and income taxes.

This compares with net profit of \$605,690 in the preceding fiscal year.

Balance sheet as of March 31, 1941, shows total current assets of \$2,445,848 and total current liabilities of \$751,336, which compare with \$2,243,754 and \$609,181, respectively, on March 31, 1940.

DALLAS, N. C.—Jerry W. Walker, who purchased the original Monarch Mill plant here several months ago, announces that the newly-equipped mill that has commenced operation has been leased for a period of ten years to a responsible company.

Dalnoca Mills is the firm name that has been chosen for the new factory.

The Walker Engineering Co., of which Mr. Walker is owner, has equipped the Dalnoca with modern machinery.

FOREST CITY, N. C.—The majority of common stock of the Alexander Mfg. Co. has been bought by the North Carolina Finishing Co., Salisbury, N. C., and the minor stockholders are being given a chance to sell or retain their holdings.

The control of the mill goes to the new owners since the First National Bank of Shelby and J. B. Lattimore and associates sold their holdings with the understanding that other holders of common stock will be privileged to sell at the same price.

Holders of the 6 per cent preferred stock are not affected by the sale of the common but can continue to hold their preferred stock until it is retired, it having been the policy of the operators to retire the preferred as rapidly as earnings permit.

Official transfer of the stock to the finishing company will take place September 22nd.

GASTONIA, N. C.—The American Utilization Co., waste manufacturing company operated by Max Goldberg and associates, will soon occupy new quarters in Gastonia, where it will be moved from Bessemer City.

The American Utilization Co. specializes in cleaning, sorting and reconditioning waste cotton for upholstery plants and other manufacturing concerns which use short cotton. Mr. Goldberg stated that the new plant will be one of the most modern and up-to-date in the South.

The plant will consist of the main mill building itself, 100 by 300 feet, half of it one-story and half of it two stories, a large warehouse and an eight-room office building, which will be of brick veneer and fitted with all modern conveniences, air conditioned, etc.

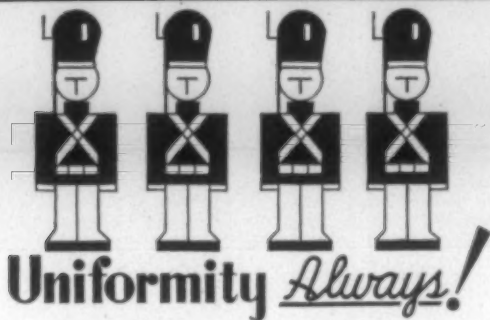
The new plant will employ about 50 persons, it is estimated. No mill houses will be built.

PACKAGE DYEING AND BLEACHING

All Types Colors on
Cotton Yarns

PIEDMONT PROCESSING COMPANY

BELMONT, N. C.



---with Seyco Sizing
(“SI-CO”)

OTHER PRODUCTS

Softeners
Shuttle Dressing
Penetrants
Alkalis

Constant uniformity in quality and performance is guaranteed in every shipment of Seyco Sizing.

Its absolute dependability in this respect has earned for Seyco Sizing such consumer acceptance that the plant in which it is produced is now the largest and most modern specializing in warp sizing.

Seyco Sizing is packed for convenience in tight, rust-proof non-absorbing steel drums, which can be stored indefinitely.

“A company is known by the customers it keeps.”



Seydel-Woolley & Co.

Textile Chemicals

748 Rice St., N. W.

ATLANTA, GA.

“You Can Count on WAK Counters”
They are Rugged, Accurate, Dependable

Write—Phone—Wire

WAK INCORPORATED
CHARLOTTE, N. C.

We've Been Through Two Wars!

Experience is a wise teacher. ★ Our 75 years of experience have taught us how best to serve our customers through periods of economic confusion.

★ Through the Spanish-American and the World War our strength was increased by consistent adherence to a policy of fair service to all customers. ★ Today we face the present and the future with firm confidence because our faith in that policy is unshaken. Our customers in turn have confidence in our ability to supply them with the highest quality, maximum economy textile starches... Potato and Wheat as well as Corn starches... backed by service which proves our sincere and constant effort to protect their interests.



STEIN, HALL & COMPANY, INC.

285 Madison Ave.
NEW YORK

1011 Johnson Bldg.
CHARLOTTE, N. C.



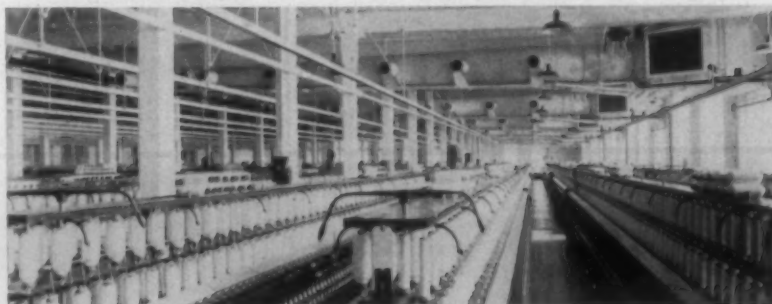
Bahnson



System

A WORLD WIDE STANDARD
OF COMPARISON

If You Have an Air-Conditioning Problem . . We Can Solve It!



1941 is already our biggest year in progress and development. With our greatly expanded facilities and many new improvements in our equipment we are better prepared than ever before to give better service in meeting changing conditions and current improvements in the Textile Industry.

THE BAHNSON COMPANY • Air Conditioning Engineers • WINSTON-SALEM, N. C.
HUMIDIFYING • HEATING • VENTILATING • COOLING • AIR FILTERING • DEHUMIDIFYING

Personal News

Robert R. Spilman has resigned as president of Appalachian Mills Co., Knoxville, Tenn.

J. W. Webb is now superintendent of the Dover Mill Co., Shelby, N. C.

Otis Davis, formerly of Kosciusko, Miss., is now master mechanic at Micolas Cotton Mill, Opp, Ala.

W. H. Smith has resigned as superintendent of the Dover Mill Co., Shelby, N. C., and will establish a small yarn mill at Lincolnton, N. C.

A. G. Dunson has been promoted from the testing laboratories to superintendent of Dunson Mills, LaGrange, Ga.

E. B. Blackstock has been promoted from the position of overseer to that of assistant superintendent of the Granite Falls (N. C.) Mfg. Co., Mills Nos. 1 and 2.

A. B. Brown, formerly of Belmont, N. C., is now night overseer of carding and spinning at the Southern Mills, Inc., Lincolnton, N. C.

E. O. Steinbach, formerly vice-president and manager of Florence Mills, Forest City, N. C., now holds a similar position with the Mayfair Cotton Mills, Arcadia, S. C.

Lewis N. Peeler has been transferred to the position of second hand in the finishing department, twisting, winding and spooling, at the Irene Mills, Taylorsville, N. C.

Alex W. Bell, formerly with the Anniston (Ala.) Mfg. Co., has accepted a position with the Werthan Bag Corp., of Nashville, Tenn., as assistant superintendent.

Denny Mayberry has been transferred from the position of second hand in twisting to that of second hand in spinning at the Irene Mills, Taylorsville, N. C.

J. J. Love, formerly superintendent of the Highland

Park Mfg. Co., Rock Hill, S. C., has been named superintendent of the Ware Shoals (S. C.) Mfg. Co.

W. B. Phillips, formerly assistant overseer of spinning at West Point Mfg. Co., Langdale, Ala., has been named overseer of spinning at Dunson Mills, LaGrange, Ga.

T. L. Griffin has been promoted from loom fixer to night overseer of weaving at the Micolas Cotton Mills, Opp, Ala.

Oscar Hale, overseer of twisting at the Langdale, Ala., plant of the West Point Mfg. Co., has also been assigned the duties of overseer of spinning at the same plant.

Col. J. Ebert Butterworth has been transferred from Camp Ritchie, Md., to the office of Administrator of Export Control, in Washington, D. C.

W. R. Williams is now president and treasurer of Sanford Cotton Mills, Sanford, N. C., relieving E. M. Underwood, Sr., of Sanford, who is retiring.

T. C. Giles, formerly of Graniteville, S. C., has been named superintendent of the LaFayette, Ga., plant of Exposition Cotton Mills.

Rodney B. Graham, textile chemist at the Johnson Chemical Co., Charlotte, N. C., has been promoted from second lieutenant to first lieutenant of infantry, U. S. Army Reserve Corps.

A. D. Elliott, formerly superintendent of The Trion Co., Trion, Ga., has been named superintendent of the Hampton Division of Pacific Mills, Columbia, S. C. Mr. Elliott is a graduate of Georgia Tech.

Howard Grimes, formerly overseer of carding and spinning, night shift, at the Micolas Cotton Mills, Opp, Ala., is now overseer of spinning at the Bama Cotton Mills, Enterprise, Ala.

L. J. Ball, son of H. O. Ball, treasurer of the Pepperton Cotton Mills, Jackson, Ga., has been called to active duty as a first lieutenant in the U. S. Q. M. C. Depot, Washington, D. C.

Worth Camel, formerly research engineer of U. S. Rubber Co., Hogansville, Ga., is now teaching yarn manufacture, testing and cotton classing in the Textile Engineering Department of Texas Tech, Lubbock, Tex.

Lloyd Jackson has joined the staff of the Textile Engineering Department at Texas Tech, Lubbock, Tex., as instructor and mechanic in textile chemistry and dyeing. He has been with Ciba Co., in New York.

HOUGHTON WOOL TOPS

Prompt Shipment All Grades on Short Notice

Suitable for Blends with Rayon or Cotton

HOUGHTON WOOL COMPANY

253 Summer St.

Boston

Write or Phone Our Southern Representative

JAMES E. TAYLOR, Phone 3-3692 Charlotte, N. C.

CLINTON

STARCHES

*For All
Textile Purposes*

UNIFORMITY
QUALITY SERVICE

CLINTON COMPANY

CLINTON, IOWA

"The Size that Satisfies"

TALGUM

SUPER-TAL

PIEDMONT SIZE

EMULSO TALLOW

GUM ELASTIC

STODGHILL

AND COMPANY
INC.

ATLANTA, GEORGIA

Positive Savings In The Spinning Room

By preventing oil damage to leather and cork cots, also oil stain damage to yarn.

NON-FLUID OIL does not drip, nor does it creep from roll necks. One oiling with NON-FLUID OIL outlasts 3 with ordinary oil.

Savings made by dependable lubrication explain the use of NON-FLUID OIL by 7 out of 10 textile mills.

*Write today for free testing sample
and descriptive bulletin.*

**New York & New Jersey
Lubricant Co.**

Main Office: 292 Madison Ave., New York, N. Y.

Southern Agent

Falls L. Thomason, Charlotte, N. C.

WAREHOUSES:

Charlotte, N. C.

Greenville, S. C.

Atlanta, Ga.

Providence, R. I.

St. Louis, Mo.

Chicago, Ill.

Detroit, Mich.

TRADE MARK REGISTERED
NON-FLUID OIL
IN U.S. PAT. OFFICE FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

J. Spencer Love, president of Burlington Mills, and Miss Dorothy Ann Beattie, daughter of the president of Woodside Cotton Mills Co., with plants in S. C., will be married in the fall.

O. A. Mace, formerly head of the weaving department at the Eureka plant of Springs Cotton Mills, Chester, S. C., has resigned that position to become overseer of weaving at Spartan Mills, Spartanburg, S. C.

B. B. Blackwelder has resigned as president of the Granite Falls Mfg. Co., Granite Falls, N. C., and A. A. Shuford Mill Co., Hickory, N. C., to devote his entire time to the newly-organized Quaker Meadow Mills, Hildebran, N. C.

W. G. Cluett, formerly vice-president and general merchandise manager of Cluett, Peabody & Co., Inc., has been appointed an industry specialist of the Textile Division of the Office of Price Administration and Civilian Supply (OPACS) in Washington, D. C.

George S. Rawlins With J. N. Pease & Co.

George S. Rawlins has become associated with the organization of J. N. Pease & Co., of Charlotte, N. C., engineers and architects. Mr. Rawlins is an experienced engineer, having engineered the new water works plant for the City of Charlotte, and the entire utilities for Fort Bragg, N. C., including sewage, water and electrical distribution.

David Clark Addresses Gossett Mills Superintendents and Overseers

David Clark, editor of the TEXTILE BULLETIN, delivered the address at the banquet of the superintendents and overseers of the Gossett Mills on Monday, August 18th.

The meeting was held in the Sunday School room of a church in the Riverside Mill village and was presided over by C. L. Duncan, superintendent of that mill.

The members of the Superintendents and Overseers Club are as follows:

N. G. Hardie, general superintendent, Chris Suber, Jr., assistant general superintendent, C. L. Duncan, superintendent, Riverside plant; W. O. Hawkins, overseer carding, Riverside plant; M. D. Nichols, overseer spinning, Riverside plant; G. J. Adams, overseer finishing, Riverside plant; L. E. Franklin, overseer twister room, Riverside plant; W. M. Carlisle, overseer Riverside Mill No. 2.

A. J. McMinn, superintendent Toxaway plant; J. O. Mahaffey, overseer carding, Toxaway plant; F. M. Burton, overseer spinning, Toxaway plant; E. B. Lowery, overseer weaving, Toxaway plant; Austin Ballew, overseer weaving, Toxaway plant; C. V. Stutts, overseer cloth room, Toxaway plant.

W. H. White, superintendent, Ladlassie plant; C. C. Chavous, overseer winding, warping and slashing, Ladlassie plant; J. A. Phillips, overseer weaving, Ladlassie plant; E. B. Powell, overseer cloth room, Ladlassie plant.

J. W. Watson, overseer roller shop; A. M. Herbert, master mechanic for all Anderson plants; W. O. Marett,

Jr., outside overseer of all Anderson plants; A. M. Smith, superintendent Gossett dyeing and finishing plant; E. B. Powell, overseer cloth room.

P. A. Kay, superintendent Williamston plant; J. H. Hampton, overseer carding, Williamston plant; G. M. Taylor, overseer spinning, Williamston plant; L. A. Faile, overseer weaving, Williamston plant; J. C. Dockery, overseer cloth room, Williamston plant; J. A. Bryant, master mechanic, Williamston plant; J. L. Wood, overseer outside, Williamston plant; P. H. Gossett, office manager, Williamston plant.

W. H. Young, superintendent Pendleton plant; K. B. Every, overseer carding, Pendleton plant; J. J. Canupp, overseer spinning and finishing, Pendleton plant; Reid McCrary, office, Pendleton plant.

Mill Employee Killed By Beamer

Anderson, S. C.—Caught in a beamer machine while working in the twister room at the Equinox Mill, W. T. Pelfrey, 72, was fatally injured August 26th.

Mr. Pelfrey had been running the same machine for more than 20 years and mill officials are at loss to understand how he became entangled in it. The theory is that he either fainted or stumbled.

The first that other persons in the room knew that Mr. Pelfrey was in trouble was when he yelled. Several rushed toward the switches, but before these could be thrown a belt slipped off the machine stopping it.

Mr. Pelfrey was badly crushed about the chest. He died before reaching the Anderson County Hospital.

Inventory Management in Rayon Weaving

Establishment of a unified statistical program, as "probably the greatest single step that the entire rayon-weaving industry could take to bring about a more intelligent control of all its operations," is suggested in the report of a study of Inventory Management in Rayon Weaving which has just been completed for the Textile Foundation.

The study is the fourth in a series of seven which the Industrial Research Department of the Wharton School of Finance and Commerce, University of Pennsylvania, is making for the Textile Foundation under the general title, Inventory Policies in the Textile Industries.

In suggesting the possibility of a unified statistical program, under the direction of an independent agency, with the sponsorship of the National Federation of Textiles, the National Rayon Weavers' Association, the Cotton-Textile Institute, the Textile Distributors' Institute, and the Textile Fabrics Association, the report made public points out that such a program could include virtually the entire rayon-weaving industry as well as a very substantial number of converters of rayon fabrics.

"The programs of the two rayon-weavers' associations arose largely out of the need for meeting problems peculiar to two different kinds of companies," the report states. "These company differences are no longer important and so it would seem that a merger of statistical efforts would now be timely."

"This analysis indicates that a working knowledge of past and future trends at the weaving and converting level can best be gained from statistics of mill buildings,

invoiced-and-held stocks, unsold stocks, and unfilled orders, and of converters' billings and stocks. A complete industry picture covering all of this material is of much greater use than several fragmentary ones."

"The complete picture could well be obtained if the suggestion for a single program were followed vigorously. It should permit a fuller coverage of the industry by eliminating duplicate reporting and by making co-operation in the program more worth while because of the greater confidence that could be placed in the data."

In addition to suggesting a unified statistical program, the study emphasizes that weavers of novelty-construction filament rayons have not been able to stabilize output by following a policy of selling gray and finished fabrics from stock. On the other hand, the study points out, weavers of rayon staples have been faced with many disadvantages by selling from current or future production. Recommendations of far-reaching significance as to ways of avoiding some of the undesirable consequences of these policies are an important part of the study.

President Vetoes Ban On Sales Of Cotton Held By Government

Washington, D. C.—President Roosevelt has vetoed an

amendment to the Agricultural Adjustment Act to prohibit sales of Government-held cotton.

In his veto message the President said that the Commodity Credit Corp. should be free to dispose of commodities acquired in an orderly manner, otherwise it would be impossible to protect farmers against surpluses and consumers against scarcity.

OBITUARY

FRED B. CROWELL

Greenville, S. C.—Fred B. Crowell, 68, sales representative for E. H. Best & Co., textile specialists of Boston, and for the last 20 years a resident of this city, died recently at a local hospital. Mr. Crowell had been in declining health for several months.

Mr. Crowell was a native of Massachusetts and lived in Somerville just before moving to Greenville.

Mr. Crowell was a member of the Poinsett Club, where he had lived recently, and was a member of the Greenville Country Club.

If you're
On the Hill or
Own the Mill



YOU

"get the Best of it"

in

GILMAN PAINT

Manufactured by Gilman Paint & Varnish Co., Chattanooga, Tenn.

One Grade . . . One Price . . . One Claim . . . *Performance!*

Carolina Distributors

OLNEY PAINT COMPANY, SPARTANBURG, S. C.

TEXTILE BULLETIN

Member of
Audit Bureau of Circulations and Associated Business
Papers, Inc.

Published Semi-Monthly By

CLARK PUBLISHING COMPANY

Offices: 218 W. Morehead St., Charlotte, N. C.

Eastern Address: P. O. Box 133, Providence, R. I.

David Clark - - - - - President and Managing Editor

Junius M. Smith - - - - - Vice-President and Business Manager

Ellis Royal - - - - - Associate Editor

SUBSCRIPTION

One year payable in advance - - - - - \$1.50

Other Countries in Postal Union - - - - - 3.00

Single Copies - - - - - .10

Contributions on subjects pertaining to cotton, its manufacture and distribution, are requested. Contributed articles do not necessarily reflect the opinion of the publishers. Items pertaining to new mills, extensions, etc., are solicited.

Government To Blame

It is somewhat difficult for business to accept a shutdown and for employees to face idleness, and miss their pay envelopes, as the result of war or defense preparations, but they will do so if it is necessary. However, they do object and have a right to protest strenuously when the shutdown and the loss of pay could have been avoided and can be directly traced to blunders upon the part of their Government.

Our Government has known for many months that Japan contemplated a drive upon Indo China and that should the movement begin, we would freeze Japanese credits and place an embargo upon shipments to that country. They knew that when those actions were taken, shipments of silk from Japan would immediately cease.

Our Government knew that because silk was the only fabric, that when burned left no residue, large quantities of it were being used for powder bags and that it was one of those products which would be used regularly.

They knew that, because of its lightness and the fact that it would not mildew, silk was the most desirable fabric for parachutes, and that with our constantly expanding army, large numbers of parachutes would be needed.

In spite of the above, and with inside information about the probable moves of Japan, our Government took no steps to accumulate reserve supplies of silk and therefore when the break with Japan came, had to confiscate all of the silk which had been accumulated by our full fashioned hosiery mills and our silk weaving mills.

It is almost inconceivable that there were not enough intelligent men in our Government to realize the necessity for accumulating stocks of silk or that they would be so dumb as to sit like the proverbial "bump upon the log" while Japan completed its preparations for the seizure of Indo China and brought about embargoes and a cessation of the shipments of silk.

Had our Government not blundered and had they accumulated a supply of silk, they would not have been forced to acquire silk held by full fashioned hosiery mills and the mills would have had enough silk to continue operations and employment until adjustments could have been made.

The full fashioned mills, which cannot operate pending adjustments and changes in construction, and their employees, who will lose wages during the period, can thank the inexcusable blundering of Government employees for their hurts.

If the intelligence of the quartermaster's department of our army is a reflection of the intelligence of our army officers as a whole, God help us when Hitler comes.

While the interruptions of the operations of full fashioned hosiery mills is deeply regretted, they should realize that for many years they have have been favored above other textile plants and have not suffered long periods of idleness as have print cloth mills, yarn mills and seamless hosiery mills.

While there must be loss of production and some idleness during the period when new styles of hosiery are being constructed, the situation, certainly as far as mills with 45-gauge and finer machines are concerned, is not as bad as has been pictured and may eventually reach a very satisfactory status.

New Woolen Mill for South Carolina

South Carolina's newest textile plant is a woolen dress goods mill at Union, which is being installed in the buildings of the former Excelsior Mills and will bear that name. Roger Milliken has moved from New York to Union and will serve as treasurer.

The mill is to be equipped throughout with new machinery and will probably be one of the most modern plants of its kind in the country.

When the majority of the cotton textile industry migrated to the South much talk was heard about the differential in wages between the North and the South, and many people believed this to be the deciding factor in the shift of the industry. However, it has been rather conclusively proved that the real reason for the failure of the Northern mills to successfully compete with the Southern mills was the obsolescence of the former. They failed to keep up with the Southern mills either in modernization of machinery or in manufacturing methods.

The location of this new and modern woolen goods manufacturing plant in the South, following the establishment of uniform minimum wages in the industry indicates that the South may in the future become the woolen manufacturing center of the nation. That there are advantages here is evidenced by the fact that a dozen woolen mills have located in the South since 1920, and are operating successfully today.

Increase Allowance for Depreciation

The Cotton-Textile Institute has rendered a service to cotton mills, by suggesting an increased allowance for depreciation.

Mills operating three shifts, or when being driven for production, as at present, wear out faster and it is advisable to increase the allowance for depreciation.

It will be safer to make the increase now and to carry it for the remaining months of the year, rather than attempt to set up the increase for the year at the end of December.

The Kearny Strike

The CIO strike at the shipbuilding yards at Kearny, N. J., caused three weeks delay in \$500,000,000 of much needed ships and kept 18,000 men out of work for that length of time.

The workers were satisfied with their wages and working conditions but union leaders, most of whom were not employees of the shipbuilding plant, insisted that every worker who failed to pay dues to the union should be discharged by the company.

The strike was not on behalf of the workers but on behalf of those who collected union dues.

It was a strike to deny individual freedom to workers who did not wish to give part of their earnings to union officials.

President Roosevelt refused to say a word in behalf of such rights and placed the navy in

charge of the yards, which means that those who refuse to pay union dues will be discharged.

In a time of national emergency, a group of dues collectors are allowed to suspend the building of much needed ships and the chief executive of the nation upholds them in denying individual freedom to workers.

It would be difficult to imagine a more disgraceful or a more un-American proceedings.

Looking for Their Funds

Max Caldwell, as head of the Chicago Retail Clerks Union, collected \$910,000 over a period of four years, but when he was recently ousted as treasurer, \$60 was found in the treasury.

The confiding members, aroused by that discovery, secured the legal right to drill open Caldwell's safe deposit box and found therein \$30,000 in jewelry and documents relating to the purchase of \$25,000 in real estate, but most of the funds of the union have disappeared. There were records of the purchase, by Caldwell, of a \$45,000 mansion in Florida. His salary was \$125 per week.

It is the old, old story of trusting souls turning over funds without requiring bonds or safeguards.

If some unions in the South would suddenly call for an accounting or require those who collect funds to furnish bonds, as is done in the business world, some other empty treasuries might be discovered.

Mill Man Wins Race

We congratulate R. Horace Johnston, of Charlotte, upon winning the classic Hambletonian Race at Goshen, N. Y., and a prize of \$20,365 with his horse, Bill Gallon.

Mr. Johnston has long been a lover and breeder of horses and got a great thrill out of winning a recognized national title.

Elliott Springs Will Return When Hitler Quits

Replying to a letter from New York relative to a textile matter, Major Elliott White Springs, president of the Springs Cotton Mills but now with the Army Air Corps, said:

"I have been in the army since June 1st and am not in touch with my mills or the market. Don't expect to be back in my office until Hitler is out of his. You have your worrying to do and I have mine. Let's both do a proper job so I may come back to my office as soon as possible."

- - - HOW LONG IS A PRODUCTION MINUTE?



THE answer to that increasingly important question depends entirely upon the efficiency of men and machines. Obsolete equipment often cuts the production minute from 60 to 30 seconds. This loss of valuable time may also be reflected in other departments, especially now when production schedules are geared to high-speed all along the line.

To insure a full 60-second production minute in bobbin cleaning departments, mills of all sizes throughout the country are turning to the modern cleaning and handling system, shown above. This compact unit—including the NEW, IMPROVED TYPE K machine (with a recommended speed of 125 bobbins per minute), the automatic Bobbin Box Hoist and Conveyor Elevator, provides unequalled over-all efficiency and economy. In the interest of your net profits, you should investigate this money-saving equipment.

Full particulars on request.

The Terrell Machine Co., Inc.

CHARLOTTE, N. C.

James F. Notman, Needham, Mass. N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J. Penn. and N. J.
Geo. Thomas & Co., Manchester, Eng. European Agt.

"INDEX" to better quality textiles

For Dyeing, Flameproofing	Use Solvay Ammonium Chloride
For Dyeing	Use Solvay Caustic Potash
For Dyeing, Hypochlorite bleaching, Kier boiling, Mercerizing, Neutralizing	Use Solvay Caustic Soda
For Hypochlorite bleaching, Oriental rug finishing, Water conditioning	Use Solvay Liquid Chlorine
For Mothproofing	Use Solvay Para-dichlorobenzene
For Dyeing, Softening	Use Solvay Potassium Carbonate
For Acid neutralizing, Degumming, Fulling, Scouring, Soap building, Softening	Use Solvay Snowflake Crystals
For Acid neutralizing, Fulling, Hypochlorite bleaching, Kier boiling, Scouring, Soap building, Water conditioning	Use Solvay Soda Ash
For Dyeing	Use Solvay Sodium Nitrite
For Acid neutralizing, Degumming, Fulling, Scouring, Soap building, Softening	Use Solvay Textile Soda

FOR TECHNICAL SERVICE . . . In the Solvay Laboratories, textile men with years of experience study your problems and make recommendations on the basis of laboratory findings. Solvay will be glad to send these textile specialists into your plant to study actual operating conditions and help adapt laboratory findings to specific plant conditions. Write today to

SOLVAY SALES CORPORATION
Alkalies and Chemical Products Manufactured by The Solvay Process Company
40 Rector Street New York, N. Y.



Piedmont Color and Chemical Co., Inc.

Oils—Soaps—Finishes—Bleach

"Spunranol" and "A. N. L. Penetrant"

Phone 2182

The Size Penetrants for Spun Rayon and Acetate
THAT WORK

High Point,

North Carolina

MASTER MECHANICS' SECTION

How To Select Small Electric Motors

The proper selection of $\frac{1}{8}$ to $\frac{3}{4}$ horsepower motors for light industrial use is quickly made from a table compiled by the Westinghouse Electric & Mfg. Co. The information is listed in the thumbnail sketch below.

SPLIT PHASE HIGH TORQUE, $\frac{1}{6}$, $\frac{1}{4}$, and $\frac{1}{2}$ H.P. high starting torque. *Where to Use:* Woodworking tools, sump pumps, tool grinders and similar equipment not starting under heavy load. *Features and Characteristics:* Sleeve bearings. Indestructible rotor. Rigid or resilient mountings. *Power Supply:* Single phase 60, 50 or 25 cycles. 110 or 220 volts. *Speeds:* 1725 R.P.M. on 60 cycles; 1425 R.P.M. on 50 or 25 cycles.

SPLIT PHASE GENERAL PURPOSE $\frac{1}{20}$ to $\frac{1}{3}$ H.P. medium starting torque. *Where to Use:* Fans, blowers, oil burners, centrifugal pumps, unit heaters and other easily started machines. Use where frequent starting is required and normal starting and running torques are sufficient. *Features and Characteristics:* Low starting current prevents light flicker. Sleeve bearings. Ball bearings. Quiet running. Reversible. Rigid or resilient mounting. *Power Supply:* Single phase 60, 50 or 25 cycles a-c 110 or 200 volts. *Speeds:* 3450, 1725 or 1140 R.P.M. on 60 cycles; 1425 R.P.M. on 25 cycles.

CAPACITOR; START, GENERAL PURPOSE. $\frac{1}{6}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$ and $\frac{3}{4}$ H.P. Extra high starting torque. *Where to Use:* Pumps, machine tools, refrigerators, compressors, water coolers, air conditioners and similar equipment needing heavy starting power. *Features and Characteristics:* Capacitor gives low starting current . . . prevents light flicker. Few wearing parts. Quiet. Rigid or resilient mounting. *Power Supply:* Single phase 50 or 60 cycles c-c; 110 or 220 volts for $\frac{1}{4}$ H.P. and smaller. Larger sizes, 110-220 volts. *Speeds:* 3450, 1725 and 1140 R.P.M. on 60 cycles; 1425 R.P.M. on 50 cycles.

POLYPHASE $\frac{1}{6}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$ and $\frac{3}{4}$ H.P. High starting torque. *Where to Use:* Companion to single phase motors. Special designs furnished for hoists, etc., that require extra-high starting torque. *Features and Characteristics:* All ratings permit starting across line. Rigid mounting standard. Ball bearings optional equipment. Sleeve bearings standard. Protection usually provided in control. *Power Supply:* 2 or 3 phase; dual frequency 60, 50 cycles. 110, 220, 440, 550 volts. *Speeds:* 3450, 1725 and 1140 R.P.M. on 60 cycles; 1425 or 960 on 50 cycles.

DIRECT CURRENT 32, 115 and 230 volts. *Where to Use:* Suitable for all direct current applications. *Features and Characteristics:* Ratings below $\frac{1}{2}$ H.P. may be started across line. For ratings $\frac{1}{2}$ H.P. and above, starting rheostats are advised. *Power Supply:* Direct current 32, 115 and 230 volts. *Speeds:* 1725 and 1140 R.P.M.

Vibration Insulation

Stripped of highly technical descriptions of the problem of isolating vibration in machines, The B. F. Goodrich Co., Akron, Ohio, has just published a new 12-page catalog section on its Vibro-Insulators, the devices of metal and rubber which have found wide acceptance in combatting the vibration and noise problem.

Excellently illustrated, both with actual installation pictures and engineer's drawings of each type of Vibro-Insulator which it manufactures, the catalog section gives all the pertinent information on each.

The first two pages are filled with a general discussion of the vibration insulation problem and the part that rubber is playing in its solution. Methods of selecting the proper Vibro-Insulator mounting are given, together with methods of mounting, and discussions of uniformity of load distribution, rocking and horizontal motion and the care of the devices.

Applications of the mountings on various types of equipment are listed, together with a table of characteristics. Nine pages are devoted to listing of the fundamental data for each type of mounting, together with an engineer's drawing of each.

New Johnson Water Control for Multiple Boiler Installations

A new system of Multiple Boiler Water Control, which is said to maintain safe and proper water levels in two or more boilers with just one boiler feed pump, has been announced by the Johnson Corp., Three Rivers, Mich. Each boiler water level is controlled separately, and water added independently of the other boilers, as the need arises. The system is electrically controlled, completely automatic in operation, according to the announcement. Construction is simple, insuring dependable operation and making installation easy.

This new Multiple Boiler Control is a variant of the Johnson Boiler Water Control which has been in operation for several years. Two stationary electrodes, of different lengths, are mounted in a small holder on each boiler. There are no moving parts which can jam or clog or become inoperative because of scale accumulation. This electrode holder can be mounted right on the water glass column or connected to other suitable openings in the boiler.

When the water level in any boiler falls below the longer electrode an electric circuit is disturbed which, through a relay, starts the boiler feed pump. At the same time a motor-operated valve is opened to divert the pump discharge into the boiler requiring water. When water level reaches the desired level the pump stops. When

The ABC's of Metal Properties

A number of terms that were formerly used mainly by engineers and scientists have been brought into rather common usage in the welding industry. It is important that the exact meaning of these words in the oxy-acetylene industry be understood, because the properties expected in a completed part must often be taken into consideration in choosing the materials from which it is to be made.

Metals can be stretched, pulled apart, bent, twisted, broken off, compressed, dented, or scratched. Some pieces of metal cannot be pulled apart by a team of horses, while others of the same size can be bent by a child. Some metals can be scratched by the fingernail while others will withstand hours of pounding against solid rock. With such widely varying properties, therefore, it becomes a problem to express the properties of metals in concise terms so that a few words will tell one exactly what type of service a piece of metal will withstand without failure.

The answer to this problem has been provided by the development of certain tests by means of which the properties of materials can be accurately determined in terms of such fundamental units as pounds and inches. Then, by a common understanding of the tests performed and the properties determined, the results can be fully understood by everyone.

Tensile Strength

Tensile strength is undoubtedly the most widely familiar of the terms to be discussed. The measure of this strength is the amount of smoothly applied, direct pull that a part will stand before it breaks. For instance, the strength of a wire could be measured by fastening one end rigidly and attaching a pan to the other end. If the pan were then loaded with shot until the wire broke, and the weight of the pan and shot determined, the strength of the wire would be found to be a certain number of pounds.

Such a test would not determine the strength of the material of which the wire was made, however, unless the cross section of the wire was taken into consideration in expressing the result. For instance, if the weight required to break the wire was 50 lb., and the wire were made of steel, it could not be said that the tensile strength of the particular steel was 50 lb. The thickness of the wire would also be a necessary part of the answer.

Of course, the method just given would be cumbersome for measuring the strength of, for instance, a 2-in. bar. For that reason, tension tests are usually made in standard machines which can apply a smooth pull of sufficient power. A jerky pull would give misleading results.

For convenience, the tensile strength of metals is given for a unit cross section, or, in other words, as the strength of a square bar, 1 in. wide, 1 in. thick, and of any convenient length. The length of the bar does not affect the results. The actual test specimens seldom have those dimensions, however. The most frequently used standard specimen is a round bar having a diameter of 0.505 in. over a distance of at least 2 inches. The results of the test are then converted by simple arithmetic to the unit cross section.

In testing welds or plate material, the test specimen may have any convenient dimensions, perhaps 8 in. by $1\frac{1}{4}$ in. by $\frac{1}{4}$ in. Let us suppose that a specimen of that size was tested in a tensile-strength testing machine as

shown above, and that it took a pull of 18,000 lb. to break the bar. What would the tensile strength of the material be?

The cross section of the bar is

$$1\frac{1}{4} \text{ in.} \times \frac{1}{4} \text{ in.} = 5/16 \text{ sq. in.}$$

If 18,000 lbs. is the strength of $5/16$ sq. in., the strength of 1 sq. in., or the tensile strength of the material, is

$$\begin{aligned} 18,000 \div 5/16 &= 18,000 \times 16/5 \\ &= 57,600 \text{ lb. per sq. in.} \\ &= 58,000 \text{ lb. per sq. in.} \\ &\quad (\text{in round numbers}) \end{aligned}$$

Often the strength of a material is known for the standard specimens, but it is desired to know the strength of a piece of some other size. For instance, suppose that the tensile strength of a material was known to be 60,000 lb. per sq. in., and that it was desired to know the strength of a round bar 2 in. in diameter.

The cross-sectional area of the bar is a circle 2 in. in diameter. To find the area of this circle, the diameter is multiplied by itself and then multiplied by a constant, 0.785.

Therefore,

$$\begin{aligned} \text{Cross section} &= 2 \times 2 \times 0.785 \\ &= 3.14 \text{ sq. in.} \end{aligned}$$

Since 1 sq. in. has a strength of 60,000 lb., the strength of this 2-in. round bar is 3.14 times 60,000 lb., or

$$\begin{aligned} \text{Strength} &= 3.14 \times 60,000 \\ &= 188,400 \text{ lb.} \end{aligned}$$

Elasticity

Most metals do not break off all at once. As the load is gradually applied in a tension-test machine, for instance, the specimen will be seen to stretch for some time. Then a noticeable "necking-in" will occur at some point, and later, as the load increases, the part will break. The stretch which is observed in such a test is not the same type of action all the way. At first it is an elastic stretch and then later a permanent stretch.

If you were to take a piece of rubber and stretch it, it would return to its original size just about as soon as you let go. If you pulled it harder, it would snap off. No matter how hard you pulled it, or twisted it, or squeezed it, however, as long as you did not break it, it would go back to its original size when the force was removed.

Now up to a certain point, metals act in that same way. They are elastic. They stretch or bend or twist under force, and then return to their original size when the force is removed, in just the same way, but not to as great an extent, as the piece of rubber.

When the rubber reaches the end of its elasticity, it breaks. Most metals, however, do not break when they reach the elastic limit, but keep on stretching for some time before they break. Beyond the elastic limit, therefore, metals act more like molasses candy—they change shape with the force, but when the force is removed, they do not return to the original shape but are permanently deformed.

In short, then, when a metal part is acted upon by a force—pulled, twisted, bent, or squeezed (compressed)—it changes shape elastically for a while or until the force reaches the elastic limit, then it permanently deforms. The elastic limit is therefore the point at which permanent deformation begins. In industrial applications this

point is approximately determined and expressed as the yield point or the yield strength of the metal.

Ductility

Ductility is a term which is frequently misused. A ductile material is one that can be permanently deformed without failure. Because a metal bends easily, it is not necessarily ductile, unless such bending is a permanent deformation. For instance, a spring may be flexible and bend easily and yet it may withstand but little permanent deformation, or set, without breaking. Such a spring would have low ductility.

As pointed out previously, rubber is elastic but molasses candy or chewing gum is ductile. All metals are both elastic and ductile to some extent, although of course some metals are more elastic than others, and some are more ductile.

There are two common methods of measuring ductility. One is a method whereby the ductility may be stated as the amount of permanent stretch a part will undergo in a tension test. The other method employs a free-bend test for a comparable determination.

In the first method a distance, usually 2 in., is measured off at the center of a standard tension-test specimen. The ends of this distance are prick-punched. The specimen is then pulled until failure occurs. After the broken parts have been matched together, the distance between the prick-punch marks is measured again. Suppose this new distance is 2.3 inches. The increase in length, or elongation, is therefore 2.3 in. minus 2 in. or 0.3 inch. Dividing 0.3 by 2 gives 0.15 or 15 per cent. Therefore, the ductility of the specimen is said to be 15 per cent elongation in 2 inches. That is the standard method for determining one measure or expression of ductility.

Brittleness

Some metals show practically no permanent distortion before failure. In other words, they fail suddenly without any warning. Such materials are said to be brittle. Brittleness, therefore, indicates a lack of ductility.

A piece of dry wood is an example of material that is brittle. It is elastic because it will bend and return to its original shape. But if it is bent a little farther, it snaps off. An example of a familiar metal which is brittle is ordinary white cast iron.

Toughness

Toughness is probably the most loosely used of all terms referring to metal properties. It is a descriptive word without any exact dimensions. It has frequently been defined as the resistance of a metal to start of permanent deformation plus the resistance the metal has to failure after permanent deformation has begun. By this definition then, molasses candy is not extremely tough, as it starts to stretch so easily.

In the discussion of ductility, no mention was made of the force required to produce failure. As usually employed, toughness would indicate that a considerable force would be required to cause failure in a test for measuring ductility, even though the ductility itself might be low. In short, then, a tough material is one that can withstand considerable stress, slowly or suddenly applied, continuously or often applied, and which will deform before failure.—*Oxy-Acetylene Tips.*

RALPH E. LOPER CO. INDUSTRIAL ENGINEERS

Specializing in Textile Costs and Operating
Methods More Than a Quarter Century.

COST SYSTEMS
WORK LOAD STUDIES
PAY ROLL CONTROLS
COST REDUCTION SURVEYS
SPECIAL REPORTS

Fall River, Mass.

Greenville, S. C.

JOSEPH SYKES BROTHERS, HUDDERSFIELD ENGLAND

For over 100 years, superlative Materials, Workmanship and Service have gone into every inch of

Sykes Card Clothing

with the result that this product today is known in textile mills throughout the world for its excellent quality and distinctive performance.

Shipments Being Received as Usual

Sole Distributors for United States

SYKES, Incorporated

Boston, Mass.
232 Summer St.

Atlanta, Ga.
234 1/2 Trinity Ave.

New Bedford, Mass.
242 N. Water St.

Charlotte, N. C.
1445 S. Mint St.



CHARLOTTE PLANT

World Rayon Output in 1940 Achieves New High Record

The world rayon industry in 1940 reached a new high production level of 2,380,810,000 pounds (yarn plus staple fiber), according to data of the Textile Economics Bureau based on actual statistics plus estimates.

This new record exceeds the previous high of 2,227,490,000 pounds in 1939 by 7 per cent. Of this 1940 total 1,143,960,000 pounds were rayon filament yarn and 1,236,850,000 pounds were rayon staple fiber.

According to the Bureau, rayon was the only fiber to set a new high production record in 1940, and for the first time in history the world production of rayon exceeded the world output of raw wool (scoured basis), according to the Bureau's data.

Because of its huge production of rayon staple fiber, Germany, in 1940, as in 1939, was first in total rayon production. The total output in Germany and occupied countries amounted to 825 million pounds or 35 per cent of the world's total. Japan was second with an output of 525 million pounds, or 22 per cent, closely followed by the United States, with an output of 471,170,000 pounds, or 20 per cent.

All the European countries engaged in actual hostilities, except Germany, produced less rayon filament yarn in 1940 than in 1939. On the other hand, all rayon filament yarn producing countries in North and South America, except Brazil, showed gains in 1940.

United States production of rayon, filament yarn at 390,070,000 pounds in 1940 accounted for 34 per cent of the world production of the continuous filament type of rayon.

The world production of rayon staple fiber in 1940, aggregating 1,236,850, set a new record total for this branch of the industry, exceeding the previous high in 1939 by 14 per cent, and also was larger than the world production of rayon filament yarn for the first time on record. The 1940 output of rayon staple was twice that of 1937.

With the exception of Japan and the United Kingdom, the 1940 output of rayon staple fiber of all other principal producing countries was in excess of the 1939 totals. On a percentage basis, the United States production of rayon staple in 1940, at 81,100,000 pounds, showed the greatest gain over the 1939 level with an increase of 58 per cent.

Germany's 1940 production of rayon staple fiber amounted to 575 million pounds, an increase of 31 per cent over 1939. The output of staple fiber in Italy increased 18 per cent to a total of 225 million pounds. While Germany's increase reflected the inclusion of Belgian, French, and Polish production, the great bulk of the increase was due to expansion of Germany's "own" staple fiber industry.

Following is the world production of rayon filament yarn plus rayon staple fiber, in pounds, for the more important countries for the years 1940, 1939, and 1938 (000 omitted):

	1940	1939	1938
Germany*	825,000	600,000	470,000
Japan	525,000	548,850	584,600
United States	471,170	379,940	287,485
Italy	325,000	310,000	268,310

Great Britain	150,000	180,000	138,195
All others	84,640	208,700	197,295

Total	2,380,810	2,227,490	1,945,885
-------	-----------	-----------	-----------

*Germany's output for 1940 includes the production of Belgium, France, Austria, Czechoslovakia, Hungary, Netherlands, Norway, Poland, and Rumania; for 1939 the total of Austria and Czechoslovakia are included; and for 1938 it includes the output of Austria.

The production of rayon staple fiber and rayon filament yarn by the "Nationalistic" countries vs. "Other" countries (in millions of pounds and per cent) for 1940 as compared with 1937 follows:

		RAYON STAPLE FIBER			
		1940		1937	
		Pounds	%	Pounds	%
Germany	575.0	47	219.2	35	
Japan	300.0	24	174.2	28	
Italy	225.0	18	156.4	25	
Total "Nationalistic"	1,100.0	89	549.8	89	
All others	136.9	11	69.4	12	
World total	1,236.9	100	619.2	100	

		RAYON FILAMENT YARN			
		1940		1937	
		Pounds	%	Pounds	%
Germany	250.0	22	125.0	10	
Japan	225.0	20	334.4	28	
Italy	100.0	9	106.6	9	
Total "Nationalistic"	575.0	51	566.0	47	
All others	569.0	49	634.0	53	
World total	1,144.0	100	1,200.0	100	

The above figures, states the Textile Economics Bureau, "illustrate the importance that Germany, Italy and Japan have attached to the building up of their domestic rayon industries. The immediate reason for this expansion has always been obvious, namely, the desire to become at least partially self-sufficient in textile materials. But additional implications of this self-sufficiency drive are now becoming apparent.

"According to reports, Germany is already seizing financial control of the rayon producing companies in occupied nations, presumably with the intention of greatly expanding the capacity of their rayon producing industries. In addition, it is claimed that Germany is currently exporting surplus rayon products to German-controlled areas.

"The ultimate object of these moves can have but one meaning, namely, an attempt to close these countries also as markets for imported raw cotton and raw material. If this can be accomplished, it will place at the disposal of these nationalistic countries an economic weapon that could be used to exert political pressure on other countries which are dependent upon the export of raw cotton and raw wool."

Testing Co. Made Distributor of Westinghouse "Sterilamp"

The United States Testing Co., Inc., has worked out

experimental installations of ultra-violet light equipment for the control of mildew and bacteria in the textile, mattress and leather industries.

New ultra-violet irradiating equipment of high intensity, such as Sterilamp, offers a definite means of controlling bacteria that may result in spoilage and decomposition of merchandise. Proper installations of Sterilamps in addition to assuring plant control of micro-organisms will also permit the delivery of more nearly sterile products to the consumer.

The Testing Company will supervise the installation of Sterilamp fixtures by regular plant electricians to make certain that units are placed for proper radiation and maximum kill of mildew and bacteria.

The United States Testing Co. has prepared special pamphlets and recommendations for mills and other plants interested in controlling mildew and bacteria by ultra-violet light.

Patents Issued To Carolinians

James W. Sherrill, of McAdenville, N. C., was awarded a patent on an apparatus for forming leases in moving warps wherein sheds can be formed in the moving warp, the lease threads can be projected through the sheds and secured in position, and at the proper time the lease threads can be released to be carried along by the moving warp, thus rendering it unnecessary to stop the machine.

Philip H. Slaughter, formerly of Charlotte and now of Fayetteville, N. C., was the recipient of a patent on automatic tension control for warp beams and the like, wherein the diameter of the warp beam controls the amount of tension applied to the beam to regulate the let-off, or to regulate the amount of tension under which the warp is wound onto a take-up beam. It is particularly applicable to let-offs for looms or winding of warp and cloth onto beams.

NEW AND REBUILT PICKER APRONS

For the Finest in Workmanship by Master Builders"

Our picker apron department is surpassed by none. Is equal by few. Our motto—"Better Built Picker Aprons!" Why not phone, write, or wire us your needs?

We can make you a factory job whether new or rebuilt. No job too little, none too large.

We also make Leather Kick-Off Aprons.

C. L. Upchurch & Sons, Inc.

P. O. Box 267

Athens, Ga.

Phone L. D. 25



VICTOR

MILL STARCH

"THE WEAVER'S FRIEND"

Distributed by
CLAUDE B. ILER
Southern Manager
GREENVILLE, S. C.

F. M. WALLACE
HOMWOOD, BIRMINGHAM, ALA.

C. C. SWITZER
GREENVILLE, S. C.

L. J. CASTILE
CHARLOTTE, N. C.



The Keever Starch Company, Columbus, Ohio

FOR SALE

12x10 I. R. Air Compressor.
17x10 with tank.
8x 8 with motor.
4x 6 Triplex Water Pump.
130 Late type Atomizer Humidifiers.
7 Parks-Cramer Controls.

P. O. Box 533,
Charlotte, N. C.

WANTED

Overseer of Weaving, Slashing and Beaming. Must be an A No. 1 Weaver on colored work.

Address reply "M. C. S.,"
c/o Textile Bulletin.

WANTED

Overseer of Finishing and Sanforizing. Must be experienced on colored work.

Address reply "C. C. R.,"
c/o Textile Bulletin.

WANTED

20 rayon section beams, 18" wooden heads, 54 1/4" width, and at least a 9" barrel.

Frank Ix & Sons, Inc.
Charlottesville, Va.

WANTED

Textile graduates for second hands and overseers. Excellent opportunities for future promotion in Carding, Spinning, Weaving and Finishing.

Write "Graduates,"
c/o Textile Bulletin.

WANTED—Position as Overseer Weaving on both broad and narrow looms running drills, twills, sateen, ducks, prints, stripes and piques. I. C. S. training. 20 years' experience as second hand and overseer; also know loom fixing on Draper looms. References from present and former employers. Address "Overseer Weaving," c/o Textile Bulletin.

SUPERINTENDENT, now employed, desires change. Good references. Address "Superintendent," c/o Textile Bulletin.

WANTED—Position as roller coverer and belt man; 25 years' experience. Can furnish the best of references; also start work at once. Address "Roller Coverer," c/o Textile Bulletin.

WANTED—Position as Manager or Superintendent Coarse Yarn Mill. Textile graduate, 20 years' experience as overseer and superintendent. Can furnish satisfactory references. Address "Yarn Mill," c/o Textile Bulletin.

Index to Advertisers

Where a — appears opposite a name it indicates that the advertisement does not appear in this issue.

	Page		Page
—A—		—L—	
Abington Textile Machinery Co.	—	Laurel Soap Mfg. Co., Inc.	—
Acme Steel Corp.	13	Loper, Ralph E.	27
Adelphia Hotel	43	Luttrell & Co., C. E.	31
Allen Co.	—	—M—	
American Cyanamid & Chemical Corp.	—	Maguire, John P.	—
American Moistening Co.	—	Manhattan Rubber Co.	Back Cover
American Viscose Co.	—	Meadows Mfg. Co.	15
Armstrong Cork Co.	2	Merrrow Machine Co., The	—
Arnold, Hoffman & Co., Inc.	—	Montgomery & Crawford	—
Ashworth Bros.	—	Moreland Sizing Co.	—
Atlanta Biltmore	—	Morton Chemical Co.	—
Auffmordt, C. A.	—	—N—	
—B—		National Aniline & Chemical Co.	—
Bahnsen Co., The	17	National Ring Traveler Co.	43
Bailey & Co., Joshua L.	34	New Departure Mfg. Co.	—
Bancroft Belting Co.	—	N. Y. & N. J. Lubricant Co.	19
Barber-Colman Co.	—	Noone & Co., Wm. R.	11
Barkley Machine Work	15	Norlander Machine Co.	—
Barnes Textile Associates	—	Norma-Hoffmann Bearings Corp.	—
Bay State Textile Co.	31	North, Inc., Frank G.	—
Borne, Scrymser Co.	31	—O—	
Brooklyn Perfex Corp.	31	Old Dominion Box Co., Inc.	—
Brown Co., The David	—	Olney Paint Co.	21
—C—		Onyx Oil & Chemical Co.	—
Carolina Refractories Co.	36	—P—	
Carolina Rubber Hose Co.	—	Pabst Sales Co.	35
Carter Traveler Co.	—	Parks-Cramer Co.	—
Charlotte Chemical Laboratories, Inc.	—	Pawtucket Spinning Ring Co.	—
Charlotte Leather Belting Co.	—	Pease & Co., J. N.	34
Ciba Co., Inc.	—	Penick & Ford	—
Clinton Co.	19	Piedmont Color & Chemical Co.	24
Cole Mfg. Co., R. D.	—	Piedmont Processing Co.	—
Corn Products Refining Co.	—	Pioneer Atlanta Co.	—
Cundiff, John O.	31	Price Spindle & Flyer Co.	—
Curran & Barry	34	Proctor & Schwartz	—
—D—		Provident Life & Accident Ins. Co.	—
Dary Ring Traveler Co.	38	—R—	
Daughtry Sheet Metal Co.	31	Ragan Ring Co.	—
Dayton Rubber Mfg. Co.	—	Rice Dobby Chain Co.	37
Dixon & Bro., E. L.	—	Riggs & Lombard, Inc.	—
Dixon Lubricating Saddle Co.	—	Rohm & Haas Co.	—
Dodenhoff Co., W. D.	—	Rose & Co., E. F.	39
Draper Corporation	—	Roy & Son Co., B. S.	—
Dronfield Bros.	—	—S—	
Dunkle & Co., Paul A.	32	Saco-Lowell Shops	—
Dunning & Boschert Press Co.	37	Seydel-Woolley & Co.	17
DuPont de Nemours & Co., E. I.	—	Sherwin-Williams Co.	—
Fine Chemicals Dept.	—	Sirrine & Co., J. E.	—
R. & H. Dept.	—	Solvay Sales Corp.	24
Dyestuff Division	—	Socony Vacuum Oil Co.	—
—E—		Sonoco Products	Front Cover
Eagle Roller Repair Works	—	Southern Spindle & Flyer Co.	—
Eaton & Brown	31	Southern Standard Mill Supply Co.	31
Emmons Loom Harness Co.	—	Stanley Works, The	—
Engineering Sales Co.	32	Steel Heddle Mfg. Co.	—
—F—		Stein, Hall & Co.	17
Fafnir Bearing Co.	—	Sterling Ring Traveler Co.	—
Foster Machine Co.	—	Stevens & Co., Inc., J. P.	34
Franklin Process Co.	—	Stodghill & Co.	19
Fulbright Laboratories, Inc.	37	Sykes, Inc.	27
—G—		—T—	
Garland Mfg. Co.	24	Terrell Machine Co.	24
Gastonia Belting & Supply Co.	39	Texas Co., The	4
Gastonia Roller, Flyer & Spindle Co.	—	Textile Appliance Co.	43
General Coal Co.	—	Textile Apron Co.	36
General Dyestuff Corp.	—	Texwood Mfg. & Sales Co.	39
Gossett Machine Works	33	Truitt Bros.	32
Greensboro Loom Reed Co.	36	—U—	
Greenville Belting Co.	31	U. S. Bobbin & Shuttle Co.	—
Grinnell Co.	3	U. S. Ring Traveler Co.	—
Gulf Refining Co.	—	Universal Winding Co.	—
—H—		Upchurch & Sons, C. L.	29
H & B American Machine Co.	—	—V—	
Houghton & Co., E. F.	—	Valentine & Co., J. W.	35
Houghton Wool Co.	18	Vanderbilt Hotel	38
Howard Bros. Mfg. Co.	—	Veeder-Root, Inc.	—
—I—		Victor Ring Traveler Co.	15
Ideal Machine Co.	38	Vogel Co., Joseph A.	43
Isell-Jefferson Co.	34	—W—	
—J—		WAK, Inc.	17
Jacobs Mfg. Co., Inc., E. H.	—	Walker Mfg. Co.	15
Jenkins Metal Co.	15	Warwick Chemical Co.	—
Johnson Chemical Co.	33	Watson-Williams Mfg. Co.	—
—K—		Wellington, Sears Co.	34
Keever Starch Co.	29	Whitin Machine Works	9
		Whitinsville Spinning Ring Co.	33
		Wolf & Co., Jacques	—

Classified Department

Southern Standard Mill Supply Co.

NEW, REBUILT AND USED TEXTILE MACHINERY and SUPPLIES

512 W. Fourth Street
Charlotte, N. C.

Phone 3-8841

1064-90 Main St., Pawtucket, R. I.

SPECIALS—HURRY! HURRY!

- 1—Johnson 5-Cylinder Slasher, 52"—Rayon.
 - 1—6 foot H. & B. Slasher Cylinder.
 - 1—5 foot H. & B. Slasher Cylinder.
 - Platt Roller Cards, 2 Cards to Set, 50" x 51".
 - 1—F. A. Lazenby Cop Winder for 8¾" Automatic Bobbins.
 - 22—Dry Cans (steel), 23" x 142", 2 stacks 11 cans each.
 - 1—Hydraulic Bale Press, 42" x 30" x 5' 8" with pump 24" and 48".
 - 1—C. & M. 48" Board Winder.
 - I. L. G. Fans motor driven, 550 and 220-volt.
- Bobbins—Spools—Supplies*

BTS

BAY STATE TEXTILE CO.
220 HARTWELL STREET • FALL RIVER, MASS.

FOR SALE

10 Woonsocket 8x3½ Speeders, 152 and 160 Spindles, 5¼ Gauge.
Chain Drive.
8000 Slubber Bobbins for Woonsocket 11x5½ Slubbers.

BELLE-VUE MANUFACTURING COMPANY
Hillsboro, N. C.

C. E. LUTTRELL & COMPANY

Used Textile Machinery and Supplies
GREENVILLE, S. C.

"Textile Center of the South"

PRIVATE DETECTIVES

Operatives furnished for all ethical legitimate cases to firms, attorneys and individuals. Male and female operatives. Dictograph, Tel-tap, and Camera services. References, any Lynchburg Bank or City Official. Phone or write Cundiff's Detectives, Inc., Lynchburg, Va. No branch offices and no solicitors.

PERFEX FIBRE BROOMS

are always the same.
They can be uniformly duplicated year in and year out. It is NOT a seasonable crop.

Get them from

BATSON

Box 841 Greenville, S. C.

WE ARE AGENTS

For These Lines of Textile Specialties

"HERON" and SUPER-SUPERIOR CHECK STRAPS
G B C SHEEPSKIN
NEUMANN CALFSKIN
NOONE'S ROLLER, SLASHER, AND CLEARER CLOTHS
G B C SPECIAL ROLLER CLOTHS
G B C BELT CEMENT—HOLT'S ROLLER GLUE
WILSON'S CANVAS LUG STRAPS
DAYTON BLUE LABEL LOOM SUPPLIES
DAYTON V-BELTS AND PULLEYS



GREENVILLE BELTING COMPANY

Phone 2218 (Day) 3916 (Nite)

SHEET METAL—ROOFING

Skylights, Guttering and Conductors
Conveyor Pipe and Separators
Approved Barrett Built-Up Roofers
DAUGHTRY SHEET METAL CO.
1109 E. Trade St. Charlotte, N. C.
Phone 2-2195

EATON & BROWN

Patent Attorneys
1206 Johnston Bldg.
Charlotte, N. C.
514 Munsey Bldg.
Washington, D. C.
Paul B. Eaton
Former Member Examining Corps
U. S. Patent Office

WANTED

Loom fixers able to fix Stafford or Draper 40-inch looms.
Address "Plant Overseer,"
c/o Textile Bulletin.

FOR SALE

Two Dobson-Bartlow pickers complete. Each picker has two porcupine 40" cylinder Buckley type beaters with 5½" extended apron on each hopper. Will sell with or without hopper.

Boaz Mills, Inc., Boaz, Ala.

WANTED—Position as Cloth Room Overseer or Superintendent; 18 years' experience in cloth room and 16 years' in weave room. Further details on request. Address reply "Cloth Room," c/o Textile Bulletin.

POSITION WANTED—Master Mechanic. Have had 17 years' experience as machinist, electrician, welding, boiler and pump work, plumbing and heating; installing new machinery, motors and shafting. Am now employed as shop foreman for large company. Married and can furnish references. Address "W. J. J.," c/o Textile Bulletin.

Gums!

Headquarters
for
**JAPAN
WAX
LOCUST
BEAN GUM**
(CAROB FLOUR)

PAUL A. DUNKEL & CO., INC.
82 WALL ST., NEW YORK, N. Y. HANOVER 2-3750

Representatives:
CHICAGO: J. H. DELAMAR & SON, 160 E. ILLINOIS ST.
NEW ENGLAND: P. A. HOUGHTON, INC., BOSTON, MASS.
PHILADELPHIA: R. PELTZ & CO., 36 KENILWORTH ST.

TRUITT
TRUITT BROS.
GREENSBORO, N. C.

Tanks • Sheet Metal • Ornamental Work •
Mechanical Specialties • Machine Work •
Industrial Trucks

*We Are Glad to Quote on any Equipment or
Machine of Special Design*

GATES VULCO ROPE

- V-Drives
- V-Flat
- Quarter-Turn
- Double-V

GATES Textile Drives

- Cone Belts
- Card Bands
- Evener Belts
- Loom Pickers

GATES Industrial Hose

ENGINEERING SALES CO.
Builders Bldg. Allen Bldg.
Charlotte, N. C. Greenville, S. C.

Stocks
Charlotte
Greenville

Delta Cotton To Be Tagged for Identification

Greenwood, Miss.—Identification of Yazoo-Mississippi Delta staple cotton from the grower to the mill was put into effect August 15th.

This action has been taken by the Delta Council because of mill complaints, particularly mills in the combed yarn belt of North Carolina, where the greater part of the country's staple cotton is consumed.

These mills have complained for years that cotton-bearing Memphis tags and which appeared to be Delta staple often gave trouble in finishing, and especially in dyeing. It did not react to processing uniformly.

Eventually it was disclosed to the industry generally, though known for a long time in the Memphis market, that cottons of the same staple and apparently the same character, originating in irrigated districts of this country, were customarily shipped to the Memphis market, where Memphis tags were substituted for the original tags.

It was not, and is not now, the intent of the Delta Council to reflect on the virtues of irrigated staples, according to their statements. However, since irrigated cotton and rain-grown cotton may pass through a classer's hands as identical in staple and character, whereas there are certain chemical differences between the two that show up in the finishing, the Delta Council felt that a program that would properly identify Delta staple, and which could not be applied to other staples, was imperative.

The program now going into effect is calculated to guarantee identification, and at the same time it is expected that it will promote Delta staple.

Here is how it works:

A trademarked outside tag is attached to each bale of cotton grown in the Yazoo-Mississippi Delta by means of a box-car lead seal.

Ownership of the tag remains in the council through the Bale Identification Association, which has been organized as a subsidiary of the council.

Use of the tag is leased to co-operative gins at the cost of 2 cents each. For the new crop coming into market, 200,000 seals have been made available, and others will be available as needed.

Under a lease contract with the Bale Identification Association, the ginner agrees to place no tags on cotton which is not warranted in a signed statement by the grower to have been produced in the Yazoo-Mississippi Delta. This signed statement is calculated to protect the ginner and place full responsibility for possible misrepresentation on the producer.

Each co-operative gin will be designated by a serial number and this number will mark the seal when the tag or marker is placed in a bale.

The marker is composed of an original tag and two coupons attached. The coupons are to be used to identify samples.

Embossed over the tag is the following agreement:

"Delta Council Bale Identification Association has licensed this tag for use in attachment to the agreed number of bales of cotton and samples for the season of

1941-1942 on condition that it will be used by said grower exclusively on cotton grown in Yazoo-Mississippi Delta and that it will not be attached to cotton grown in any other region."

The tag also will carry the plantation name, locality and season and gin identification.

The Delta Council comprises more than 2,000 members in the Delta. Hugh L. Gary, Wildwood Plantation, Greenwood, is president of the council. Homer McNamara, director of the Government experiment Station at Stoneville, is chairman of the Bale Identification program.

Growers in the Arkansas Alluvial plain, through the Agricultural Council, is understood to have launched a similar bale tag identification program. This cotton is known as Arkansas Delta cotton.

Rohm & Haas Offers New Detergent for Textile Application

A synthetic detergent called Triton 750 and described as "an aqueous paste of a sulfonated ether salt" is being introduced by Rohm & Haas Co., Philadelphia.

The new detergent, a combination of 1 per cent Triton 720 and 1/2 per cent ammonium bifluoride removed greasy iron spots from a white rayon fabric that could not be cleaned in any other way.

Among the other properties given for Triton 750 is that it eliminates scouring for kier boiling of certain rayon and cotton fabrics, may be applied in the desizing bath, or it may be padded on separately, thus eliminating the intermediate scouring process.

Also, its addition to printing pastes assists penetration and produces sharper prints. Used with soap in the final bowl in wool scouring, the new product is said to improve greatly the appearance and physical characteristics of the wool, making it whiter and loftier and more easily rinsed.

Processing Upland Cotton—15/16 To One Inch—With Staple Rayon and Wool

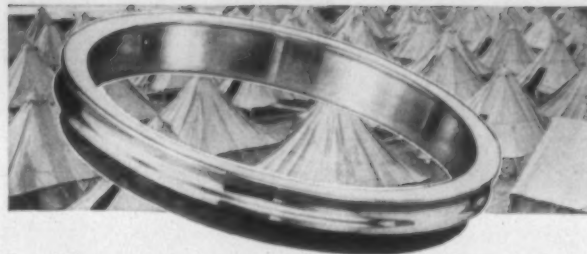
(Continued from Page 8)

fibres can be done better and more economically on frames equipped with the long draft system and roll spacing, than can be done with the old system of drawing out the roving with the front, middle and back top roll weighted. To make a slip roll of the middle roll helps matters somewhat, but does not give as good results as the long draft equipment, where the rolls and belts are kept clean and in good working condition.

We have tried all and have settled on the long draft system, but we do not employ drafts longer than 15.00 on any of the yarns we make.

With this exception, and the use of different twist multiples for the different blends and mixes all other practice or methods are the same as when spinning cotton alone.

These twist multiples vary from 3.25 for coarse all-cotton yarns to 3.60 for fine yarn wool and rayon blends with cotton.



For duck and other HEAVY TWISTING

For this tough assignment, choose tough rings! DIAMOND FINISH rings are the product of 68 years' intensive specialization. Constant research and continual improvement have brought them to a point where today DIAMOND FINISH provides, without qualification, the hardest, smoothest, most uniform traveler raceway we have ever seen. Remember — DIAMOND FINISH is the one complete ring service, offering all designs needed to keep your spinning and twisting at top performance.

WE MAKE ALL TYPES OF HOLDERS

WHITINSVILLE (MASS.)

SPINNING RING CO.

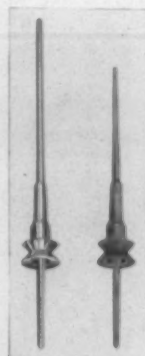
Makers of Spinning and Twister Rings since 1873

Southern Representative H. ROSS BROCK, 3 Vannoy St., Greenville, S. C. Tel. 2824

Johnson Chemical Company
Charlotte, N. C.

Penetrants Finishing Softeners
Sizing Compounds 88% Textile Glycerine
Specialties

MANUFACTURING CHEMISTS
TELEPHONE 6450 P. O. BOX 1418



We Make
LONG Blade Spindles
from

SHORT Blade Spindles

by new perfected method of electric welding, and guarantee all spindles not to break under running conditions.

We also change Acorns and Whorls sizes to mill specifications.

Gossett Machine Works

W. Franklin Ave., Ext.
Gaston, N. C.

SELLING AGENTS for SOUTHERN COTTON GOODS

CURRAN & BARRY

320 Broadway

New York, N. Y.

WELLINGTON SEARS CO.

65 Worth Street

New York

Representing 18 mills—merchandising 25,000 fabrics

*Industrial Fabrics—Garment Fabrics
Towels and Toweling—Drapery and Upholstery
Fine Cottons—Rayon*

BRANCHES

Boston
Philadelphia
Atlanta

Chicago
St. Louis
New Orleans

San Francisco
Los Angeles

Domestic

Export

MERCHANDISING

Joshua L. Baily & Company

40 Worth Street

New York

Iselin-Jefferson Co.

90 Worth Street

New York

Chicago — Los Angeles

San Francisco — Dallas — St. Louis

Atlanta

J. N. PEASE & COMPANY

ENGINEERS — ARCHITECTS

JOHNSTON BUILDING

CHARLOTTE, N. C.

Cotton Goods Markets

New York.—The OPACS order on the sale of seconds and shorts has caused further criticism of that body. The order was that the price for second and shorts of all cotton goods shall not exceed 95 per cent of the ceilings set for firsts of the several classes of cloth now under Government regulation.

Some of the larger selling houses interpreted this stipulation to mean that it applies to all cotton goods now under ceiling prices. Because the amendment was contained in the same order that set prices for fine goods, however, there was at first some confusion in the trade as to whether the OPACS intended the regulation of seconds and shorts to be all-inclusive.

Advices from Washington clearly indicated that OPACS means to include the control of seconds and shorts in all future ceiling orders. This procedure is expected to be extended to rayon gray goods, although definite mention of it was omitted from the rayon fabric order that went into effect on August 25th.

Before the stipulation was effected, buyers readily paid $2\frac{1}{2}$ to 3 per cent on seconds and 20 to 40-yard pieces of print cloths, broadcloths and other carded yarn goods. These discounts are fairer to the mills than the basis set by the OPACS.

Instead of one price for all seconds and shorts, it was observed, it would conform to normal practice to have a price of $7\frac{1}{2}$ to 10 per cent off on 10 to 20 yards. Fine goods seconds and shorts ordinarily sell for 10, 15 and 20 per cent off the price of firsts and regulars.

As an indication of market conditions, a few days ago the Cone Export & Commission Co. opened its books for the November production of its mills of denim, on a 17-cent card, offered to regular users only. Before the day was out, all November production had been sold and the offer was withdrawn. The 17 cents was a $\frac{1}{2}$ -cent increase over the October price.

On the other hand, more than 50,000,000 square yards of cotton uniform twill khaki cloth was offered by 15 concerns in reply to a request by the Government for bids on 35,000,000 square yards. It is likely that later, as supplies become increasingly difficult to procure, more mills will be anxious to get direct Government contracts so that they will have a priority rating to pass on to their suppliers.

J. P. STEVENS & CO., Inc.

Selling Agents

40-46 Leonard St., New York

Cotton Yarn Markets

Philadelphia.—A ceiling for carded yarns seems to be inevitable, and when it comes the yarn manufacturers may thank themselves for it. Carded yarns selling at higher prices than comparable combed yarns just isn't in the books.

There is some indication, from reports, that the Office of Procurement and Civilian Supply may get together with the carded yarn producers before issuing the ceiling prices. If this report is true, and some doubt it, it would be a great deal more satisfactory to the carded yarn producers than was the setting of the ceiling prices for combed yarns, when the first thing the manufacturer knew about it was the issuance of the order.

There is no fear in the carded section of a ceiling as such but sellers in all categories do fear that some action will be taken by Government agents who do not understand all the ramifications of this trade, without proper opportunity for the mills and sellers affected to present their views and not necessarily their objections. Spinners feel that the Government would find spinners and merchants only too anxious to co-operate if they could present their angle on some of the questions. Combed spinners feel, for example, the error OPACS made in the original combed ceiling in the differentials on coarse counts would not have occurred if the combed spinning trade itself had had the opportunity of discussing the action with it before the ceiling was announced last May 23rd.

Some carded yarn spinners feel that if a ceiling is set or even after a ceiling is announced and future changes in it are made that they should have the option of cancelling contracts if they do not like the new conditions. They feel such a clause will eventually be inserted in contracts so that conditions, they feel, will not be so much in favor of the buyer as now. Spinners declare the Government should consult more freely with those who know the business and by this means they feel that more cordial relationships will be established resulting in a larger production and distribution.

In the meantime, the market is going along under the influence of expected action on the carded ceiling and has seen little new action recently. Mills for the most part are holding back on new offers, giving the prospective ceiling as explanation. Some also are unwilling to quote anyway, irrespective of the ceiling move, as they are already sold as far ahead as they care to, and now want to make sure of deliveries.

J. W. VALENTINE & CO., Inc.

Selling Agents

40 Worth St. New York City

Southern Representative

T. HOLT HAYWOOD

612 S. Main St. Winston-Salem, N. C.

*For
level dyeing*

**DESIZE
WITH
EXSIZE**

Successful mills everywhere are removing starch sizes thoroughly, quickly, and economically with Exsize. Cloth is thereby best conditioned for bleaching and level dyeing. The cost is nominal.



Our laboratory facilities and practical field men are available to help you with desizing problems.

PABST SALES COMPANY
CHICAGO, ILLINOIS

Warehouses at New York, and Textile
Warehouse Co., Greenville, S. C.

OUR APRONS ARE MADE THE MODERN WAY

Each Apron is gauge-tested for uniformity at every point, uniformity with the other Aprons in the same shipment—and uniformity with previous shipments.

Made of the finest bark-tanned or chrome leather that money can buy. *A rough finish inside to grip—a smooth finish outside for smooth flow of the yarn.* A sure fit guaranteed for all systems.

**BETTER APRONS - QUICKER DELIVERIES
LOWER PRICES**

Write for Free Samples

Textile Apron Company
East Point, Georgia

J. B. KENNINGTON, OWNER



**LONGER
LASTING
BOILER
FURNACES**

"Boiler furnaces lined with CARECO last two to four times longer than those lined with fire brick. Write for quotation."

CAROLINA REFRACTORIES CO.
Hartsville, S. C.



**Greensboro
Loom Reed Co.**

Greensboro

North Carolina

Standards for Appearance of Cotton Yarn

(Continued from Page 6)

standards. One board represented approximately the best yarn in the group and the other three fell progressively lower, extending to a yarn of very poor appearance. Selections were made with a view of obtaining as nearly equal steps as possible between the successive boards of each group.*

When the selections had been made and carefully checked several times, the boards were photographed and a series of prints made in natural size. In March, 1938, these photographs were submitted to a group composed of the members of the Section on Cotton Yarns and Threads of Committee D-13, for their examination and criticism. After discussion, it was agreed by the members of this Section that the photographs were an adequate representation of the range of appearance for each of the series or count groups, and it was voted to adopt the photographs as tentative A. S. T. M. standards for cotton yarn appearance.†

Since the development of these standards, they have been used very effectively in the cotton quality investigations of the Agricultural Marketing Service. Reports of routine spinning tests from the laboratories now contain an analysis of the appearance of the test yarns, and such information has been demonstrated to be an important criterion of cotton quality. A number of sets of the standards have been purchased by textile laboratories and commercial enterprises, many of which report that the standards are being used regularly. In some instances, yarns are being purchased against specifications which include the grade of yarn appearance as represented by these standards.

Description of the Standards

The standards comprise five panels or series of photographs of cotton yarn in natural size, identified as Series x10" in size and the photographs in each series are mounted on wallboard about 15½x27½"x3/16" in size.

Each series is used for a particular range of yarn numbers, and the yarns for each series are wound with a specified number of threads or wraps per inch.

The ranges of yarn numbers and wraps per inch for each series are as follows:

	Range of Yarn Numbers	Wraps Per In.
Series 1	3s to 7s	16
Series 2	7s+ to 16.5s	20
Series 3	16.5s+ to 32s	26
Series 4	32s+ to 65s	38
Series 5	65s+ to 125s	43

Four grades of yarn, designated as A, B, C and D, are

*Acknowledgment is made of the work of J. M. Cook and staff, of the Agricultural Marketing Service, Clemson, S. C., in preparing the yarns and selecting the specimens for the standards.

†For A. S. T. M. specifications for number of tests and tolerances permitted, see "A. S. T. M. Standards on Textile Materials," American Society for Testing Materials, Philadelphia, Pa., 1935, p. 36.

provided for each of the five series. The quality of the yarn decreases from A to D.

Notes On Use of the Standards

In grading a sample of yarn with the standards, it is wound on a blackboard with the specified number of wraps per inch, and with sufficient tension to remove any kinks and to keep the yarn uniformly spaced. When the board has been wound with yarn it is held beside each photograph of the appropriate series and a comparison made.

Occasionally a single large imperfection such as a "slug," a piecing, or a kink may be observed in examining a yarn board. In such cases, it is well to examine both sides of the board of yarn before assigning a grade to it, and to judge whether the imperfection is more or less accidental or whether it is typical of the yarn under consideration.

Although only 4 grades are provided for each series, it is feasible to recognize thirds of grades, such as A plus, A, A minus, B, plus, B, B minus, etc., so that 12 distinct gradations may be employed in grading yarns. When a sample has been graded, it is designated as "Grade B," "Grade C+," etc. If the yarn count is not given, it may be desirable also to mention the series number of the standards used.

The appearance standards may be used for either carded or combed single yarns. They are not applicable to plied yarns.

If large numbers of samples are to be reserved for any length of time, it may be found to be economical for a mill or laboratory to have a quantity of boards made in a carpenter shop. Boards can be made of 3/16-inch wall-board, cut to about 7x11 inches, and fitted with a notch to accommodate the screw on the clamp of the winding machine. The boards may be given one or two coats of dull black paint. (Glossy paint reflects lights to an objectionable degree, particularly if the boards are to be photographed.) Envelopes made of heavy kraft paper and open at one end will protect the yarn during handling or filing.

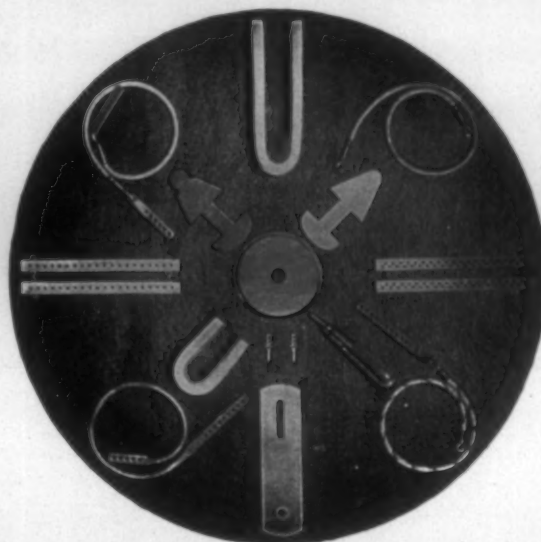
The yarn appearance standards can be used successfully in daylight, with the light rays falling perpendicularly on the boards and photographs. Difficulties due to variations in illumination, however, can be overcome by the use of artificial light. Such a device is inexpensive to construct and will be found to be helpful if the standards are used to any great extent.

Availability of the Standards

Copies of the yarn appearance standards may be obtained from the Agricultural Marketing Service, U. S. Department of Agriculture. The price of the standards is \$1.00 per panel or \$5.00 per set of 5 panels, postpaid. A check or money order, made payable to the United States Treasury, should accompany each order.†

†These standards have not been promulgated as official standards of the United States Department of Agriculture.

Rice Dobby Chain Co.



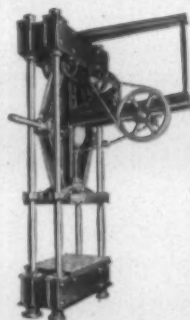
Millbury, Mass., U. S. A.

Southern Representative

JOHN P. BATSON + P. O. Box 1055 + Greenville, S. C.

Samples On Request

BALING PRESS



Motor Drive, Silent Chain, Center of Screw.

Push Button Control—Reversing Switch with limit stops up and down.

Self contained. Set anywhere you can run a wire.

Our Catalogue sent on request will tell you more about them.

Dunning & Boschert Press Co., Inc.

328 West Water St. SYRACUSE, N. Y.

VELVAK

Belt Lubricant

CLEANS, SOFTENS, PRESERVES AND
WATER-PROOFS BELTS
INSURES 100% POWER TRANSMISSION
CONTAINS NO GUM OR PITCH

FULBRIGHT LABORATORIES, Inc.

Offices, Latta Arcade

CHARLOTTE, N. C.

TEXTILE MEN
SELECT THIS FAMOUS HOTEL AS
HEADQUARTERS
IN
NEW YORK

The Vanderbilt is invariably the choice of leaders in the industry—men who know the value of a good address, an advantageous location, plus superior accommodations and excellently prepared food.

★
600 outside rooms, each with bath
Single from \$3. Double from \$5.
Suites from \$8.
PARK AVE. AT EAST 34th ST.
A Manger Hotel

Oscar F. Banse, Manager

The
VANDERBILT
HOTEL



DARY RING TRAVELERS

Made in sizes for all counts of cotton, wool, worsted silk and rayon yarns. A trial order will convince you of the superiority and durability of Dary Ring Travelers.

THE DARY RING TRAVELER CO.

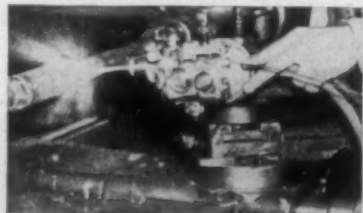
TAUNTON, MASS.

B. G. DARY, Treas. and Mgr.

JOHN E. HUMPHRIES, Box 843, Greenville, S. C.

JOHN H. O'NEILL, Box 720, Atlanta, Ga.

H. REID LOCKMAN, Box 515, Spartanburg, S. C.



**Drawing
Roll
Collars
Built
Up**

**Restored to Their Original Size
by "METALLIZING"** Metal
Spraying

Write for information

IDEAL MACHINE COMPANY

Bessemer City, N. C.

Repairers of Steel Rolls, Spindles, Flyers

Planning Ahead in the Spinning Room

(Continued from Page 10)

on these functions of their job they will pay much closer attention to keeping all parts of their job up to par, and the expense and time devoted to this report will pay for itself many times over. This also gives the overseer more time to devote to the administrative functions of his job, rather than having to spend so much time with details that the section man can do just as well. Incidentally, training of this kind makes the section man much more capable of later being able to step into the shoes of the second hand and later those of the overseer.

A great deal of training of new help is now going on in the textile mills of the South, and a great deal of poor training is also being done. The major portion of the training of a spinner is the problem of piecing up ends, creeling, and cleaning. This is all very well, but it is possible for a spinner to be able to piece up an end, creel, and keep a frame clean, and still make a tremendous amount of bad work. *Proper training* is the important thing.

Almost any girl can quickly learn to piece up an end, by looping it over her index finger and holding it to the producing roller until the end takes hold of the fibers coming out and is carried through the traveler onto the bobbin. If she is taught that this is the only object of the process this is the thing she will do until told better. Normally, she is not familiar with the processes following the spinning, so if she gets the bobbin back into production she has fulfilled her job, so far as she knows. If a plant has a large number of inexperienced spinners this may in the long run be the best method, because ends pieced up in this manner will surely break down at the spooler guides, where a fairly uniform knot may result, but this also results in a loss of production at the following processes. With proper training, the spinner can be taught to grasp the yarn from the bobbin between the thumb and forefinger, twist it into the fibers being produced from the delivery rolls, and the resultant joining is scarcely perceptible. Another point that should be watched with newcomers in the spinning room is the creeling. If the spinner leaves a tail on the outgoing bobbin when creeling in the new bobbin it will cause a doubling in the spinning. A tail of six inches of roving may result in a doubling as long as 120 inches or more in the yarn, due to the long draft, and this should be particularly guarded against.

Whenever practical, I think the spinner should be taken through the following processes, such as the spooling and warping, to show her the results of poor piecing of ends in the spinning room. She should also be shown samples of cloth made from yarn that has had poor piecing in the spinning room so that she can tie her work in with the finished product. Often the spinner is concerned only with her personal job and does not have any idea of the troubles she might be causing in the subsequent processes, and doesn't realize the importance of her job in the production of good cloth or yarn.

The overseer, or second hand, should go over all parts of the frames in his department, estimating the life of each part, and then check with the supply department on the number of each part in stock. In this way a potential shortage may be prevented, and plenty of time allowed for deliveries.

Inventory Guides in Cotton Fine Goods Manufacture

Low stocks of unsold merchandise are the first warning of impending inventory problems in the manufacture of cotton fine goods, according to a study made by the Industrial Research Department of the Wharton School of Finance and Commerce, University of Pennsylvania, publication of which is announced by the Textile Foundation.

This report, *Inventory Guides in Cotton Fine Goods Manufacture*, is the third of a series of seven which the Industrial Research Department of the Wharton School has prepared for the Textile Foundation under the general title, *Inventory Policies in the Textile Industries*. The final number will summarize the six industry reports and discuss recent inventory trends in the production and distribution of textiles.

In discussing statistical guides for the management of inventories in the fine goods industry, the report points out that low mill stocks are a "danger signal" because they customarily give rise to heavy forward buying, followed by advancing prices that often stimulate an expansion of output far beyond the ordinary needs of the market. Such production increases usually come so late in a buying movement as to require almost immediate curtailment; yet such action can seldom, if ever, be as drastic as the decline in customer takings, with the result that heavy mill inventories are almost bound to accumulate once this cycle of events begins.

The report not only deals with statistical guides but it also discusses the question of whether all fine goods should be made strictly to order. On this issue it comes to the conclusion that the policy of manufacturing to order would be neither a practical nor a desirable one for meeting the inventory problems of the industry as a whole.

Even if a mill makes a highly-styled fabric like colored yarn shirtings, which it is impractical to stock, it still does not escape an "inventory" problem, states the report. Instead it has changed its "inventory" from unsold merchandise to unsold machinery time. In addition to colored yarn shirtings, combed broadcloths, voiles, and lawns are also discussed in the study.

The inventory series of studies was recommended to the Textile Foundation by the Committee on Economic Research of the Institute for Textile Research of which Fessenden S. Blanchard is chairman.

Copies of the report, *Inventory Guides in Cotton Fine Goods Manufacture*, at 50 cents each, may be obtained from the Textile Foundation, Room 225, Industrial Building, National Bureau of Standards, Washington, D. C. The Foundation is also accepting orders for the entire series at \$3.00, individual reports to be mailed on publication. Titles already released are:

What To Do About Denim Stocks.

Minimizing Inventory Losses in the Men's Wear Division of the Wool-Textile Industry.

Inventory Guides in Cotton Fine Goods Manufacture.

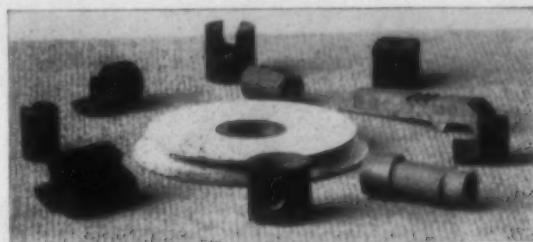
To be released shortly are:

Inventory Management in Rayon Weaving.

Controlling Stocks of Cotton Print Cloth.

Stock and Production Policies in Full Fashioned Hosiery Manufacture.

Inventory Trends in Textile Production and Distribution.



Oilless Wood Idler Blocks for Spinning.

Wood and Metal Oilless Bearings for all Textile Machinery.

Harness and Dobby Sheaves with Oilless Bushings.

Self Weighted Middle Rolls for Rayon Spinning.

All kinds of Temple Rolls for Rayon Weaving.

Texwood Manufacturing and Sales Company Greenville, S. C.

If It's Made of Wood, or Partly Wood, We Can Furnish It

PATENTED



PLUSH COVERED SCAVENGER ROLLS

Pick up better, strip easier, will keep flutes clean, last longer. Ply lays in opposite direction from center to facilitate stripping.

FULLY COVERED BY PATENT NO. 2,234,779
AND MANUFACTURED EXCLUSIVELY BY

E. F. ROSE & COMPANY
MAIDEN, N. C.

Gastonia Belting & Supply Co. GASTONIA, N. C.

Manufacturers of Leather Belting, Pickers, Bumpers, Loom Strapping, Etc.

Distributors for Manhattan Rubber Products, Belt Cement, and Belt Hooks of all kinds.

137 E. Franklin Ave.

P. O. Box 174

Phone 788

Southern Sources of Supply

For Equipment, Parts, Material, Service

Following are the addresses of Southern plants, warehouses, offices, and representatives of manufacturers of textile equipment and supplies who advertise regularly in TEXTILE BULLETIN. We realize that operating executives are frequently in urgent need of information, service, equipment, parts and materials, and believe this guide will prove of real value to our subscribers.

ACME STEEL CO., 2838 Archer Ave., Chicago, Ill. Sou. Office and Warehouse, 603 Stewart Ave., S.W., Atlanta, Ga.; F. H. Webb, Dist. Mgr. Sou. Sales Reps.: C. A. Carrell, 523 Clairmont Ave., Decatur, Ga.; Phone Dearborn 6267; Frank G. German, 1617 Beverly Drive, Charlotte, N. C.; Phone 3-3293; G. R. Easley, 107 Manly St., Greenville, S. C.; Phone 1610; William G. Polley, 937 Cherokee Lane, Signal Mountain, Tenn.; Phone Chattanooga 8-2635; John C. Brill, 309 Magazine St., New Orleans, La.; Phone Magnolia 5859. Warehouses at Atlanta, Ga.; Greenville, S. C.; New Orleans, La.

AMERICAN CYANAMID & CHEMICAL CORP., 30 Rockefeller Plaza, New York City. Sou. Office and Warehouse, 822 W. Morehead St., Charlotte, N. C.; Hugh Puckett, Sou. Sales Mgr. Reps.: John D. Hunter, E. H. Driver, Paul F. Haddock, A. W. Foley, Charlotte Office; E. J. Adams, 1404 S. 22nd St., Birmingham, Ala.; Jack B. Button, 610 N. Mendenhall St., Greensboro, N. C.; C. B. Suttle, Jr., 423 Clairmont Ave., Decatur, Ga.; K. E. Youngchild, 10 South St., Mobile, Ala.

AMERICAN MOISTENING CO., Providence, R. I. Sou. Plants, Charlotte, N. C., and Atlanta, Ga.

AMERICAN VISCOSE CO., 350 Fifth Ave., New York City. Sou. Office, Johnston Bldg., Charlotte, N. C. Harry L. Dalton, Mgr.

ARMSTRONG CORK CO., Industrial Div., Textile Products Section, Lancaster, Pa. Sou. Office, 33 Norwood Place, Greenville, S. C. J. V. Ashley, Sou. Dist. Mgr.

ARNOLD, HOFFMAN & CO., Inc., Providence, R. I. Chester L. Eddy, Asst. Sales Mgr., 903-904 Woodside Bldg., Greenville, S. C. Sou. Reps.: W. Chester Cobb, Erwin Laxton and Reid Tull, Charlotte, N. C.; office; John H. Graham, Box 904, Greenville, S. C.; Harold T. Buck, 1615 12th St., Columbus, Ga.; John R. Brown, Trussville, Ala.

ASHWORTH BROS., Inc., Charlotte, N. C. Sou. Offices, 44-A Norwood Place, Greenville, S. C.; 215 Central Ave., S.W., Atlanta, Ga.; Texas Rep.: Textile Supply Co., Dallas, Tex.

AUFFMORDT & CO., C. A., 2 Park Ave., New York City. Sou. Rep.: George B. Wilkinson, 613 Johnston Bldg., Charlotte, N. C.

BAHNSON CO., THE, Winston-Salem, N. C.

BANCROFT BELTING CO., Boston, Mass. Warehouse and Sou. Distributor, Carolina Supply Co., Greenville, S. C.

BARBER-COLMAN CO., Rockford, Ill. Sou. Office, 31 W. McBee Ave., Greenville, S. C.; J. H. Spencer, Mgr.

BARKLEY MACHINE WORKS, Gastonia, N. C.

BARNES TEXTILE ASSOCIATES, Inc., 10 High St., Boston, Mass. Sou. Office, 1409 Johnston Bldg., Charlotte, N. C.

BAY STATE TEXTILE CO., 220 Hartwell St., Fall River, Mass. N. C. Agt., John Graham Webb, P. O. Box 344, Hillsboro, N. C.; Phone 127-B.

BECCO SALES CORP., Buffalo, N. Y. Sou. Reps.: J. D. Quern and D. S. Quern, 1930 Harris Road, Charlotte, N. C.

BEST & CO., Inc., EDWARD H., Boston, Mass. Sou. Rep.: W. C. Hanes, 185 Pinecrest Ave., Decatur, Ga.; Phone Dearborn 5974.

BORNE, SCRYMSEY CO., 17 Battery Place, New York City, and 815 W. Morehead St., Charlotte, N. C. Sou. Mgr., H. L. Siever, P. O. Box 1169, Charlotte, N. C. Sales Reps.: W. B. Uhler, 608 Palmetto St., Spartanburg, S. C.; R. C. Young, 1546 Stanford Place, Charlotte, N. C.; John Ferguson, P. O. Box 392, LaGrange, Ga.

BROWN CO., THE DAVID, Lawrence, Mass. Sou. Reps.: Greenville, S. C.; Ralph Gossett and Wm. J. Moore; Griffin, Ga.; Belton C. Plowden; Dallas, Tex.; Russell A. Singleton Co., Inc.; Gastonia, N. C.; Gastonia Mill Supply Co.; Chattanooga, Tenn.; James Supply Co.; Spartanburg, S. C.; Montgomery & Crawford.

CAROLINA LOOM REED CO., Greensboro, N. C.

CAROLINA RUBBER HOSE CO., Salisbury, N. C.

CAROLINA REFRACTORIES CO., Hartsville, S. C.

CARTER TRAVELER CO., Gastonia, N. C.

CHARLOTTE CHEMICAL LABORATORIES, Inc., Charlotte, N. C. Peter S. Gilchrist, Jr., Rep.

CHARLOTTE LEATHER BELTING CO., Charlotte, N. C. Fred R. Cochrane, Sales Mgr., and J. E. McKenna, Charlotte, N. C.; J. E. Beattie, Box 82, Greenville, S. C.

CIBA CO., Inc., Greenwich and Morton Sts., New York City. Sou. Offices and Warehouses, Charlotte, N. C.

CLINTON CO., Clinton, Iowa. Luther Knowles, Sou. Agt., Box 127, Phone 2-2426, Charlotte, N. C. Sou. Reps.: Grady Gilbert, Box 342, Phone 3192, Concord, N. C.; Clinton Sales Co., Inc., Geo. B. Moore, Box 481, Phone 822, Spartanburg, S. C.; Boyce L. Estes, Box 325, Phone 469, LaGrange, Ga.; Gordon W. Enloe, P. O. Box 351, Gadsden, Ala.; Harold P. Goller, 900 Woodside Bldg., Tel. 3715, Greenville, S. C. Stocks carried at Carolina Transfer and Storage Co., Charlotte, N. C.; Consolidated Brokerage Co., Greenville, S. C.; Bonded Service Warehouse, Atlanta, Ga.; Textile Products Distributing Co., Rock Hill, S. C.; Industrial Chemicals, Roanoke Rapids, N. C.

COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.

COLE MFG. CO., R. D., Newnan, Ga.

CORN PRODUCTS REFINING CO., 17 Battery Place, New York City. Corn Products Sales Co., Greenville, S. C.; John R. White, Mgr.; Corn Products Sales Co., Montgomery Bldg., Spartanburg, S. C.; J. Canty Alexander, Asst. Sou. Mgr.; Corn Products Sales Co. (Mill and Paper Starch Div.), Hurt Bldg., Atlanta, Ga.; C. G. Stover, Mgr.; Corn Products Sales Co., 824-25 Southeastern Bldg., Greensboro, N. C.; W. R. Joyner, Mgr.; Corn Products Sales Co., Comer Bldg., Birmingham, Ala.; L. H. Kelley, Mgr. Stocks carried at convenient points.

CUTLER, ROGER W., 141 Milk St., Boston, Mass. Sou. Office, Woodside Bldg., Greenville, S. C. Sou. Agts.: M. Bradford Hodges, 161 Springs St., N.W., Atlanta, Ga.; Jesse Hodges, 1336 East Morehead St., Charlotte, N. C.; D. Byrd Miller, Woodside Bldg., Greenville, S. C.

CURTIS & MARBLE MACHINE CO., 72 Cambridge St., Worcester, Mass. Sou. Reps.: Greenville, S. C.; 1000 Woodside Bldg., W. F. Woodward, Tel. 3336; Dallas, Tex.; O. T. Daniels, care Textile Supply Co.; Philadelphia, Pa.; 794 Drexel Bldg., J. A. Fitzsimmons; New York, N. Y., 200 Fifth Ave., F. C. Bryant.

DARY RING TRAVELER CO., Taunton, Mass. Sou. Rep.: John E. Humphries, P. O. Box 843, Greenville, S. C.; John H. O'Neill, P. O. Box 720, Atlanta, Ga.; H. Reid Lockman, P. O. Box 515, Spartanburg, S. C.

DAYTON RUBBER MFG. CO., Dayton, O. Sou. Reps.: William L. Morgan, P. O. Box 846, Greenville, S. C.; J. O. Cole, P. O. Box 846, Greenville, S. C.; Thomas W. Meighan, 1149 St. Charles Place, Atlanta, Ga. Sou. Jobbers: Greenville Textile Supply Co., Greenville Belting Co., Greenville, S. C.; Textile Mill Supply Co., Charlotte, N. C.; Odell Mill Supply Co., Greensboro, N. C.; Young & Van Supply Co., Birmingham, Ala.; Industrial Supply, Inc., LaGrange, Ga.; Textile Supply Co., Dallas, Tex.

DETERGENT PRODUCTS CO., 494 Spring St., N.W., Atlanta, Ga. Offices at: Columbia, S. C.; Raleigh, N. C.; Texarkana, Ark.; Columbus, Ga.

DIEHL MFG. CO., Elizabethport, N. J. Textile Dept., P. N. Thorpe & Co.; 267 Fifth Ave., New York City. Sou. Offices, Atlanta, Ga. 172 Trinity Ave., S.W., S. G. Boyd; Dallas, Tex., 2nd Unit Santa Fe Bldg., Olin Duff.

DIXON & BRO., Inc., R. L., Dallas, Tex.

DRAPER CORPORATION, Hopedale, Mass. Sou. Offices and Warehouses, Spartanburg, S. C.; Clare H. Draper, Jr.; Atlanta, Ga., 242 Forsyth St., S.W., W. M. Mitchell.

DU PONT DE NEMOURS & CO., Inc., E. I., Organic Chemicals Dept., Dyestuffs and Fine Chemicals Div., Wilmington, Del. John L. Dabbs, Sou. Sales Mgr.; D. C. Newman, Acting Sou. Sales Mgr.; J. D. Sandridge, Asst. Sou. Sales Mgr.; E. P. Davidson, Asst. Mgr. Technical. Sou. Warehouses, 414 S. Church St., Charlotte, N. C. Reps.: C. H. Ashbury, H. B. Constable, J. P. Franklin, J. F. Gardner, L. E. Green, M. D. Haney, W. R. Ivey, S. A. Pettus, A. W. Picken, N. R. Vieira, Charlotte Office; J. T. McGregor, Jr., James A. Kidd, 1935 Jefferson Standard Bldg., Greensboro, N. C.; John L. Dabbs, Jr., G. H. Boyd, 604 Provident Bldg., Chattanooga, Tenn.; R. D. Sloan, T. R. Johnson, Greenville, S. C.; W. F. Crayton, Adam Fisher, Jr., W. A. Howard, Columbus, Ga.; J. A. Franklin, Augusta, Ga.; Tom Taylor, Newnan, Ga.

DU PONT DE NEMOURS & CO., Inc., E. I., The R. & H. Chemicals Dept. Main Office, Wilmington, Del.; Charlotte Office, 414 S. Church St., LeRoy Kennette, Dist. Sales Mgr. Reps.: J. L. Moore, Technical Man; Penn R. Lindsay, Salesman, 414 S. Church St.; N. P. Arnold, 2386 Alston Dr., Atlanta, Ga., Technical Service Man; R. C. Cochrane, 356 Pine Tree Drive, Atlanta, Ga., Salesmen; O. G. McCullers, McDaniel Heights Apt., Greenville, S. C., Tech. Repr.

EAGLE ROLLER REPAIR WORKS, Greenville, S. C.

EATON, PAUL B., 218 Johnston Bldg., Charlotte, N. C.

EMMONS LOOM HARNESS CO., Lawrence, Mass. Sou. Plant, 118 1/4 W. Fourth St., Charlotte, N. C. George Field, Mgr.; Clifton E. Watson, Mgr. Sou. Sales. Wm. S. Taylor, Supt. Charlotte Plant, Box 2036, Tel. 3-7503. Arthur W. Harris, Harris Mfg. Co., Agt., P. O. Box 1982, Phone Main 2643, Atlanta, Ga.; Henry E. Littlejohn, Piedmont Feed & Sales Co., Agt., P. O. Box 387, Phone 5440, Greenville, S. C.; W. A. Braley, Southwest Supply Co., Agt., P. O. Box 236, Phone 170, Itasca, Tex.

ENGINEERING SALES CO., 217 Builders' Bldg., Charlotte, N. C., and Allen Bldg., Greenville, S. C.; S. R. and V. G. Brookshire.

FIDELITY MACHINE CO., 3908-18 Frankford Ave., Philadelphia, Pa. Sou. Reps.: John E. Fox, Liberty Life Ins. Bldg., Charlotte, N. C.; R. C. Aycock, 911 Provident Bldg., Chattanooga, Tenn.

FOSTER MACHINE CO., Westfield, Mass. Sou. Offices, 509 Johnston Bldg., Charlotte, N. C.

FRANKLIN PROCESS CO., Providence, R. I. Sou. Plants, Southern Franklin Process Co., Greenville, S. C.; Central Franklin Process Co., Chattanooga, Tenn.

FULTON BAG & COTTON MILLS, Atlanta, Ga.

GASTONIA BELTING & SUPPLY CO., Gastonia, N. C.

GASTONIA BRUSH CO., Gastonia, N. C.

GATE CITY LIFE INSURANCE CO., Greensboro, N. C.

GENERAL COAL CO., 1217 Johnston Bldg., Charlotte, N. C., J. W. Lassiter, Sou. Sales Mgr.; Frank W. Reagan, Asst. Sou. Sales Mgr. Reps.: G. P. W. Black, Apt. A-2, Virginia Apts., Greenville, S. C.; H. G. Thompson, 97 Tacoma Circle, Asheville, N. C.; Guy H. Sowards, 421 N. Blount St., Raleigh, N. C.; Frank B. Crusan, 210 E. Franklin St., Office No. 3, Richmond, Va.; Dudley H. R. Wigg, 633 Wainwright Bldg., Norfolk, Va.; W. A. Counts, Res. Mgr., Law and Commerce Bldg., Bluefield, W. Va.; Dave B. Smith, Charlotte, N. C.; Combustion Engineer, E. H. Chapman, Charlotte, N. C.

GENERAL DYESTUFF CORP., 485 Hudson St., New York City. Sou. Office and Warehouse, 2459 Wilkinson Blvd., Charlotte, N. C., B. A. Stigen, Mgr.

GEORGE MACHINE WORKS, W. J., Spartanburg, S. C.

GILMAN PAINT CO., Chattanooga, Tenn. Carolina Dist.: Olney Paint Co., Spartanburg, S. C.

GOSSETT MACHINE WORKS, Franklin Ave., Ext., Gastonia, N. C.

GREENSBORO LOOM REED CO., Greensboro, N. C. Phone 5678. Geo. A. McPetters, Mgr. Phone 2-0205. C. F. Wallace, Repr.

GREENVILLE BELTING CO., Greenville, S. C.

GULF OIL CORPORATION OF PA., Pittsburgh, Pa. Division Offices: Atlanta, Ga.—A. M. Wright, Greenville, S. C.; W. G. Robertson, Jr., Spartanburg, S. C.; J. H. Hooten, Gastonia, N. C.; R. G. Burkhalter, Charlotte, N. C.; G. P. King, Jr., Augusta, Ga.; Boston, Mass.; New York, N. Y.; Philadelphia, Pa.; New Orleans, La.; Houston, Tex.; Louisville, Ky.; Toledo, O.

HART PRODUCTS CORP., 1440 Broadway, New York City. Sou. Mgr., Charles C. Clark, Box 274, Spartanburg, S. C. Sales Rep.: Tally W. Piper, Box 534, Fairfax, Ala.

H & B AMERICAN MACHINE CO., Pawtucket, R. I. Sou. Offices, 815 The Citizens and Southern National Bank Bldg., Atlanta, Ga., J. C. Martin, Agt.; Johnston Bldg., Charlotte, N. C., Elmer J. McVey, Mgr.; Fritz Zweifel, Fred Dickinson, Jim Miller, sales and service representatives.

HOLLISTER, E. W., Box 721, Spartanburg, S. C. Distributor in N. C. and S. C. for The Merrow Machine Co. and American Safety Table Co. Merrow parts and supplies stocked at Spartanburg.

HOUGHTON & CO., E. F., 240 W. Somerset St., Philadelphia, Pa., W. H. Brinkley, Sou. Sales Mgr., 1301 W. Morehead St., Charlotte, N. C. Sou. Reps.: C. L. Elgert, 7 St. Paul St., Baltimore, Md.; T. E. Hansen, 414 N. Sheppard St., Richmond, Va.; S. P. Schwoyer, 507 N. Main St., High Point, N. C.; D. O. Wylie, 1301 W. Morehead St., Charlotte, N. C.; L. L. Brooks, P. O. Box 263, Griffin, Ga.; J. J. Reilly, 1830 Peachtree Apt. No. 17, Atlanta, Ga.; H. J. Reid, 308 Hillcrest Ave., Decatur, Ga.; V. C. Shadden, 1821 Auburndale Ave., Chattanooga, Tenn.; J. W. Byrnes, 701 N. San Jacinto, Houston, Tex.; G. J. Reese, 527 S. Front St., New Orleans, La.; W. A. Isenberg, Lub. Engineer, 1301 W. Morehead St., Charlotte, N. C.

HOUGHTON WOOL CO., 253 Summer St., Phone Liberty 1875, Boston, Mass. Sou. Rep.: Jas. E. Taylor, P. O. Box 2084, Phone 3-3692, Charlotte, N. C.

HOWARD BROS. CO., Worcester, Mass. Sou. Office and Plant, 244 Forsyth St., S.W., Atlanta, Ga.; Guy L. Melchor, Sou. Agent; S. W. Rep.: Russell A. Singleton Co., Inc., Mail Route 5, Dallas, Tex.; J. Floyd Childs, 244 Forsyth St., S.W., Atlanta, Ga.; Carl M. Moore, 833 York St., Gastonia, N. C.

JACOBS MFG. CO., THE E. H., Danielson, Conn. Sou. Executive, W. Irving Bullard, Pres., Charlotte, N. C.; Sou. Sales Mgr., S. B. Henderson, P. O. Box 133, Greer, S. C.; Sou. Service Mgr., Dan B. Griffin, P. O. Box 544, Charlotte, N. C.; Sou. Subsidiary, The E. M. Jacobs Mfg. Corp., Box 544, Charlotte, N. C. Sou. Distributors: Odell Mill Supply Co., Greensboro, N. C.; Textile Mill Supply Co., Charlotte, N. C.; Charlotte Supply Co., Charlotte, N. C.; Gastonia Mill Supply Co., Gastonia, N. C.; Shelby Supply Co., Shelby, N. C.; Sullivan Hardware Co., Ander-

son, S. C.; Montgomery & Crawford, Inc., Spartanburg, S. C.; Carolina Supply Co., Greenville, S. C.; Greenville Textile Supply Co., Greenville, S. C.; Fulton Supply Co., Atlanta, Ga.; Southern Belting Co., Atlanta, Ga.; The Young & Vann Supply Co., Birmingham, Ala.

JOHNSON CHEMICAL CO., Statesville Ave., Charlotte, N. C., P. O. Box 1418. Stephen J. Hawes.

KEEVER STARCH CO., Columbus, O. Sou. Office, 1209 Woodside Bldg., Greenville, S. C.; Claude B. Iler, Sou. Mgr. Sou. Warehouses: Greenville, S. C., Charlotte, N. C. Sou. Reps.: J. C. Attaway, Greenville, S. C.; Luke J. Castile, 924 Monticello Terrace, Charlotte, N. C.; F. M. Wallace, Homewood, Birmingham, Ala.

KEYSTONE BELTING CO., 213 N. Third St., Philadelphia, Pa. Sou. Rep.: T. J. Digby, Jr., P. O. Box 244, Greer, S. C.

LAUREL SOAP MFG. CO., Inc., 2607 E. Tioga St., Philadelphia, Pa. Sou. Reps.: A. Henry Gaede, P. O. Box 1092, Charlotte, N. C.; W. R. Sargent, P. O. Box 1044, Greenville, S. C.

LOPER CO., RALPH E., 500 Woodside Bldg., Greenville, S. C. New England Office, Buffington Bldg., Fall River, Mass.

MERROW MACHINE CO., THE, 8 Laurel St., Hartford, Conn. E. W. Hollister, P. O. Box 721, Spartanburg, S. C.; R. B. Moreland, P. O. Box 895, Atlanta, Ga.

MONTGOMERY & CRAWFORD, Inc., Spartanburg, S. C.

MORELAND CHEMICAL CO., Inc., Spartanburg, S. C. Gen. Mgr., Paul C. Thomas. Sou. Reps.: Jos. P. Carter, T. J. Boyd, Kenneth T. Moore, W. F. Biggers.

MORTON CHEMICAL CO., 2110 High Point Road, P. O. Box 368, Greensboro, N. C. Phone 6623. Jos. R. Morton, Pres.; W. H. McCormick, Jr., Sec. and Plant Mgr.; S. V. Valjavee, Chief Chemist. Greenville, S. C. Office, Room 312 Woodside Bldg., Phone 4400, P. O. Box 1197; Robert Buck, Mgr.

NATIONAL ANILINE & CHEMICAL CO., Inc. Gen. Office, Rector St., New York City. Julian T. Chase, Res. Mgr., 201 W. First St., Charlotte, N. C.; Kenneth Mackenzie, Asst. to Res. Mgr., 201 W. First St., Charlotte, N. C. Salesmen: D. S. Moss, W. L. Barker, R. B. Murdoch, Harry L. Shinn, J. W. McCalla, A. R. Akerstrom, 201 W. First St., Charlotte, N. C.; J. H. Shuford, Jefferson Standard Bldg., Greensboro, N. C.; J. A. Parker, Jefferson Standard Bldg., Greensboro, N. C.; H. A. Rodgers, 1006 James Bldg., Chattanooga, Tenn.; J. A. Spratt, 1006 James Bldg., Chattanooga, Tenn.; J. I. White, American Savins Bank Bldg., Atlanta, Ga.; W. H. Jackson, Apt. 10-A, Country Club Apts., Columbus, Ga.; F. L. Feagle, Jr., Masonic Temple Bldg., New Orleans, La.

NATIONAL RING TRAVELER CO., 354 Pine St., Pawtucket, R. I. Sou. Office and Warehouse, 131 W. First St., Charlotte, N. C. Sou. Agt., L. E. Taylor, Charlotte, N. C. Sou. Reps.: Otto Pratt, Union Mills, N. C.; H. B. Askew, Box 272, Atlanta, Ga.; Wm. S. Johnstone, P. O. Box 993, Gastonia, N. C.

NEW DEPARTURE MFG. CO., Bristol, Conn. Sou. Reps.: Harry G. Gurske, 1319 Kings Drive, Charlotte, N. C., Phone 5603; Mark Goedecke, Mgr. New Departure, 1624 Hunting Place Ave., Philadelphia, Pa., Phone Davenport 2500.

NEW ENGLAND BOBBIN & SHUTTLE CO., Nashua, N. H. Sou. Reps.: Charlotte Supply Co., Charlotte, N. C.; Industrial Supply Co., Inc., Clinton, S. C.; W. G. Hamner, Box 267, Gastonia, N. C.; A. G. Murdaugh, Griffin, Ga.

N. Y. & N. J. LUBRICANT CO., 292 Madison Ave., New York City. Sou. Office, 1000 W. Morehead St., Phone 3-7191, Charlotte, N. C., Spartanburg, S. C., Atlanta, Ga., Greenville, S. C. Falls L. Thomason, Sou. Dist Mgr.

NOBLE, ROY, New Bedford, Mass. Sou. Rep.: John P. Batson, P. O. Box 841, Greenville, S. C.

NORLANDER MACHINE CO., New Bedford, Mass. Sou. Plant, York Road, Gastonia, N. C.

NORMA HOFFMANN BEARINGS CORP., Stamford, Conn.

NORTH FRANK G., Inc., P. O. Box 92, Marietta, Ga.; P. O. Box 844, Atlanta, Ga. Reps.: W. W. Greer, P. O. Box 336, Greenville, S. C.; W. J. Greer, P. O. Box 305, Greenville, S. C.

OLD DOMINION BOX CO., Lynchburg, Va. Factories at Lynchburg, Va., and Charlotte, N. C.

OLNEY PAINT CO., Spartanburg, S. C.

ONYX OIL & CHEMICAL CO., Jersey City, N. J. Sou. Reps.: Edwin W. Klumph and Cliff C. Myers, 121 E. 3rd St., Charlotte, N. C.; Cliff Smith, P. O. Box 671, Atlanta, Ga.

PABST SALES CO., 221 N. LaSalle St., Chicago, Ill. Sou. Rep.: W. A. Pardue, 2721 Augusta Road, Greenville, S. C., P. O. Box 1147. Sou. Warehouse, Textile Warehouse Co., Greenville, S. C.

PARKS-CRAMER CO., Plants at Fitchburg, Mass., and Charlotte, N. C. Atlanta Office, Bona Allen Bldg.

PEASE & CO., J. N., Johnston Bldg., Charlotte, N. C.

PENICK & FORD, LTD., Inc., 420 Lexington Ave., New York City; Cedar Rapids, Iowa; P. G. Wear, Sou. Sales Mgr., Atlanta, Ga.; W. J. Kirby, L. S. Poer, Memphis, Tenn.; J. H. Almand, Atlanta Office; C. T. Lassiter, Greensboro, N. C.; G. L. Morrison, Spartanburg, S. C.; T. H.

Nelson, Charlotte, N. C.; W. R. Brown, Dallas, Tex. Stocks carried at convenient points.

PIEDMONT COLOR & CHEMICAL CO., High Point, N. C.

PIEDMONT PROCESSING CO., Belmont, N. C.

PRICE SPINDLE & FLYER CO., Spartanburg, S. C.

PROCTOR & SCHWARTZ, Inc., Philadelphia, Pa. Sou. Rep.: H. G. Mayer, 414 Johnston Bldg., Charlotte, N. C.

PROVIDENT LIFE & ACCIDENT INS. CO. (Group Accident and Health and Welfare Plans Div.), Chattanooga, Tenn. Southeastern Div. Office, 815 Commercial Bank Bldg., Gastonia, N. C.

RAGAN RING CO., Atlanta, Ga.

RHOADS & SONS, J. E., 35 N. Sixth St., Philadelphia, Pa. Sou. Reps.: L. H. Schwoebel, 512 N. Spring St., Winston-Salem, N. C.; J. W. Mitchell, Box 1589, Greenville, S. C.; A. S. Jay, P. O. Box 687, Sylacauga, Ala.; J. T. Hoffman, 88 Forsyth St., S.W., Atlanta, Ga.; Atlanta Store, C. R. Mitchell, Mgr., 82 Forsyth St., S.W., Phone Walnut 5915, Atlanta, Ga.

RIGGS & LOMBARD, Inc., Lowell, Mass. Sou. Rep.: Ernest F. Culbreath, 602 Com. Bank Bldg., Charlotte, N. C.

ROHM & HAAS CO., 222 W. Washington Square, Philadelphia, Pa. Sou. Office, 1109 Independence Bldg., Charlotte, N. C., Phone 2-3291. Dist. Mgr., F. H. Del Plaine, Charlotte, N. C. Reps.: W. A. Wardell, Charlotte, N. C.; A. K. Haynes, 1666 Emory Road, N.E., Atlanta, Ga., Phone Dearborn 6482.

ROSE & CO., E. F., Maiden, N. C.

ROY & SONS, B. S., Worcester, Mass. Sou. Office, Box 1045, Greenville, S. C.; Jack Roy, Representative. Sou. Distributors: Odell Mill Supply Co., Greensboro, N. C.; Textile Mill Supply Co., Charlotte, N. C.; Textile Supply Co., Dallas, Tex.

SACO-LOWELL SHOPS, 60 Battery March St., Boston, Mass. Sou. Office and Supply Depot, Charlotte, N. C., Walter W. Gayle, Sou. Agt.; Atlanta, Ga., John L. Graves and Miles A. Comer, Selling Agts.; Greenville, S. C., H. P. Worth, Selling Agt.

SEYDEL-WOOLLEY & CO., 748 Rice St., N.W., Atlanta, Ga.

SHERWIN-WILLIAMS CO., Cleveland, O. Sou. Textile Sales Dept., 222 W. First St., Charlotte, N. C., E. H. Stegar, Sou. Reps.: James E. East, 222 W. First St., Charlotte, N. C.; Harris Ford, 158 E. Main St., Spartanburg, S. C.; Wm. H. Lambeth, Jr., 70 N. Broad St., Atlanta, Ga.

SINCLAIR REFINING CO., Dist. Office: 573 W. Peachtree St., Atlanta, Ga. State Offices: Atlanta, Ga.; Birmingham, Ala.; Columbia, S. C.; Charlotte, N. C.; Nashville, Tenn.; Jackson, Miss. Industrial Reps.: W. H. Lipscomb, Atlanta, Ga.; W. P. Christie, Macon, Ga.; S. M. Newsom, Tifton, Ga.; L. S. Durham, Birmingham, Ala.; H. M. Lee, Greenville, S. C.; J. F. Whelchel, Orangeburg, S. C.; C. C. Nix, Charlotte, N. C.; J. O. Holt, Raleigh, N. C.; G. C. Kimbrough, Knoxville, Tenn.; P. A. Raiche, Memphis, Tenn.; P. W. Godard, Jackson, Miss.

SLAUGHTER MACHINERY CO., 429 E. Kingston Ave., Charlotte, N. C.

SLAYSMAN CO., THE, 813 E. Pratt St., Baltimore, Md.

SOCONY-VACUUM OIL CO., Inc., Southeastern Div. Office, 1602 Baltimore Trust Bldg., Baltimore, Md. Warehouses: Union Storage Co., 1000 W. Morehead St., Charlotte, N. C.; Textile Warehouse Co., 511 Rhett St., Greenville, S. C.; South Atlantic Bonded Warehouse Co., Greensboro, N. C.; New South Express Lines, Columbia, S. C.; Terminal Storage Corp., 317 N. 17th St., Richmond, Va.; Taylor Transfer Co., 102 Boush St., Norfolk, Va.

SOLVAY SALES CORP., 40 Rector St., New York City. Sou. Branches: 212 S. Tryon St., Charlotte, N. C.; H. O. Pierce, Mgr. Sou. Reps.: Earl H. Walker, 208 S. Union St., Concord, N. C.; H. W. Causey, 215 Middleton Drive, Charlotte, N. C.; R. E. Lowes, 3704 Starmount Drive, Greensboro, N. C.; M. W. Fletcher, 1 Pritchard Way, N.E., Atlanta, Ga.

SONOCO PRODUCTS CO., Hartsville, S. C.

SOUTHERN SPINDLE & FLYER CO., Charlotte, N. C.

SOUTHERN STANDARD MILL SUPPLY CO., 512-514 W. Fourth St., Charlotte, N. C. A. Benson Davis, Mgr.

STALEY MFG. CO., A. E., Decatur, Ill. Sou. Offices, 2000 Rhodes-Haverty Bldg., Atlanta, Ga. Wm. H. Randolph, Jr., Southeastern Mgr.; L. A. Dillon, Asst. Southeastern Mgr. Sou. Reps.: George A. Dean, H. A. Mitchell, Montgomery Bldg., Spartanburg, S. C.; W. T. O'Steen, Greenville, S. C.; H. F. Taylor, Jr., Monroe, N. C.; W. N. Dulaney, 12 Montevallo Lane, Birmingham, Ala.

STANDARD-COOSA-THATCHER CO., Chattanooga, Tenn. Sales and Executive Offices, Lafayette Bldg., Philadelphia, Pa. Sou. Reps.: W. S. Lawson, care Standard-Coosa-Thatcher Co., Chattanooga, Tenn.; J. P. Rickman, care Standard-Coosa-Thatcher Co., Chattanooga, Tenn.; N. P. Murphy, Guilford Bldg., Greensboro, N. C.

STANLEY WORKS, THE, New Britain, Conn. Sales Reps.: A. Y. Bristol, 104 Maple Ave., Tel. Narberth 3795, Narberth, Pa.; G. R. Douglas, 707 Columbian Mutual Towers, Tel. 8-7117, Memphis, Tenn.; M. A. Hawkins, 3813 General Taylor St., Tel. Upton 6037-J, New Orleans, La.; H. C. Jones, c/o The Stanley Sales Co., 651 Humphries St., S.W.,

Tel. Main 4110, Atlanta, Ga.; W. D. Low, 17 West Brow Terrace, Chattanooga, Tenn.; G. J. McLernon, 209 Hubbard St., San Antonio, Tex.; C. W. Lynch, 1386 E. Morehead St., Charlotte, N. C.

STEEL HEDDLE MFG. CO., Main Office and Plant, 2180 W. Allegheny Ave., Philadelphia, Pa. Greensboro Office, Guilford Bank Bldg., Box 1917, Greensboro, N. C.; C. W. Cain, Dist. Mgr., Henry P. Goodwin, Greenville Office and Plant, 621 E. McBee Ave., Box 1899, Greenville, S. C.; J. J. Kaufmann, Jr., Asst. Vice-Pres. and Mgr. of Southern Divisions, Davis L. Batson, Sam Zimmerman, Jr., Atlanta Office and Plant, 268 McDonough Blvd., Box 1486, Atlanta, Ga.; H. R. Gaffney, Dist. Mgr., Vernon A. Graff, Asst. Mgr., Barney R. Cole, Southern Shuttles, a division of the Steel Heddle Mfg. Co., 621 E. McBee Ave., Box 568, Greenville, S. C., Louis P. Batson, Pres.

STEIN, HALL & CO., Inc., 285 Madison Ave., New York City. Sou. Office, Johnston Bldg., Charlotte, N. C., Ira L. Griffin, Mgr., T. C. Davis; W. N. Kline, 17 Camille Ave., Greenville, S. C.; W. B. Strickland, 1 Collier Rd., Atlanta, Ga.

STERLING RING TRAVELER CO., 101 Lindsey St., Fall River, Mass. Sou. Rep., Geo. W. Walker, P. O. Box 1894, Greenville, S. C.; D. J. Quillen, P. O. Box 443, Spartanburg, S. C.

STODGHILL & CO., Atlanta, Ga.

TERRELL MACHINE CO., Charlotte, N. C. E. A. Terrell, Pres. and Mgr.

TEXAS CO., THE, New York, N. Y. Dist. Offices, Box 901, Norfolk, Va., and Box 1722, Atlanta, Ga. Bulk Plants and Warehouses in all principal cities. Lubrication Engineers: P. C. Bogart, Norfolk, Va.; D. L. Keys, Richmond, Va.; W. H. Goebel, Roanoke, Va.; F. M. Edwards, Goldsboro, N. C.; W. P. Warner and R. L. Scott, Greensboro, N. C.; H. L. Marlow, B. D. Heath and C. W. Meador, Charlotte, N. C.; J. S. Leonard, Greenville, S. C.; F. G. Mitchell, Charleston, S. C.; L. C. Mitchum, Atlanta, Ga.; A. C. Keiser, Jr., Atlanta, Ga.; J. G. Myers, Birmingham, Ala.; P. H. Baker, textile engineer, New York, N. Y.

TEXTILE APRON CO., East Point, Ga.

TEXTILE-FINISHING MACHINERY CO., Providence, R. I. Sou. Office, Johnston Bldg., Charlotte, N. C.

TEXTILE SHOP, THE, Franklin St., Spartanburg, S. C. E. J. Eaddy, Sec. and Treas.

TODD, Inc., F. C., Gastonia, N. C.

TRUITT BROS., Greensboro, N. C.

U S BOBBIN & SHUTTLE CO., Lawrence, Mass. Sou. Plants, Greenville, S. C.; Johnson City, Tenn. Sou. Reps.: E. Rowell Holt, 208 Johnston Bldg., Charlotte, N. C.; M. Ousley, P. O. Box 216, Greenville, S. C.; D. C. Ragan, High Point, N. C.; A. D. Roger, Johnston City, Tenn.

U. S. RING TRAVELER CO., 159 Aborn St., Providence, R. I. Sou. Reps.: William W. Vaughan and Wm. H. Rose, P. O. Box 792, Greenville, S. C.; Oliver B. Land, P. O. Box 158, Athens, Ga.; Torrence L. Maynard, P. O. Box 456, Belmont, N. C.

UNIVERSAL WINDING CO., Providence, R. I. Sou. Offices, 819 Johnston Bldg., Charlotte, N. C. Reps.: R. M. Mauldin and Ike E. Wynne; 1008 Norris Bldg., Atlanta, Ga. Rep.: J. W. Stripling.

UPCHURCH & SONS, Inc., C. L., Athens, Ga.

VALENTINE & CO., New York City. Sou. Rep.: T. Holt Haywood, 612 S. Main St., Winston-Salem, N. C.

VEDDER-ROOT, Inc., Hartford, Conn. Sou. Office, Room 231 W. Washington St., Greenville, S. C., Edwin Howard, Sou. Sales Mgr.

VICTOR RING TRAVELER CO., Providence, R. I., with Sou. Office and Stock Room at 173 W. Franklin Ave., P. O. Box 842, Gastonia, N. C. Also stock room in charge of B. F. Barnes, Jr., Mgr., 1733 Inverness Ave., N.E., Atlanta, Ga.

WAK, Inc., Charlotte, N. C.

WALKER MFG. CO., Inc., Philadelphia, Pa. Sou. Rep.: R. T. Osteen, 11 Perry Road, Phone Greenville 1869, Greenville, S. C. Greenville Textile Supply Co., Greenville, S. C.; Odell Mill Supply Co., Greensboro, N. C.; R. D. Hughes Sales Co., 2106 S. Lamar St., Dallas, Tex.; R. B. Dorman, Box 66, Station C, Atlanta, Ga.

WARWICK CHEMICAL CO., W. Warwick, R. I. Sou. Branch Factory at Rock Hill, S. C. Sou. Reps.: M. M. McCann, Box 825, Burlington, N. C.; Henry Papini, 306 Mills Ave., Greenville, S. C.; W. E. H. Searcy, III, Box 123, Griffin, Ga.

WHITIN MACHINE WORKS, Whitinsville, Mass. Sou. Office, Whitin Bldg., Charlotte, N. C., W. H. Porcher and R. I. Dalton, Mgrs.; 1317 Healey Bldg., Atlanta, Ga. Sou. Reps.: M. P. Thomas, Charlotte Office; I. D. Wingo and M. J. Brantley, Atlanta Office.

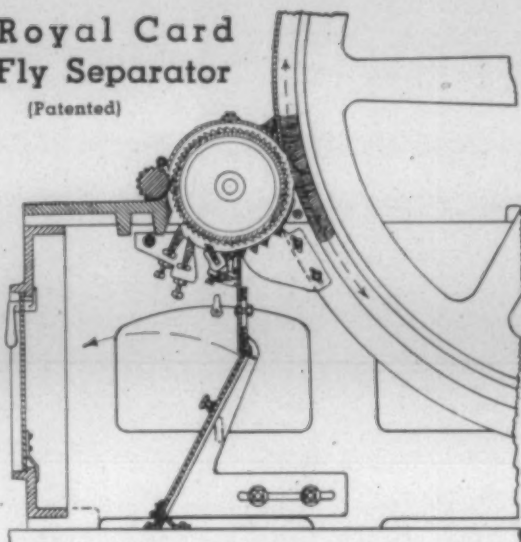
WHITINSVILLE SPINNING RING CO., Whitinsville, Mass. Sou. Rep.: H. Ross Brock, 3 Vannoy St., Greenville, S. C., Phone 2824.

WINDLE & CO., J. H., 231 S. Main St., Providence, R. I.

WOLF, JACQUES & CO., Passaic, N. J. Sou. Reps.: C. R. Bruning, 306 S. Chapman St., Greensboro, N. C.; G. W. Searell, Box 102, Lenoir City, Tenn.

Royal Card Fly Separator

(Patented)



Our Royal Card Fly Separator installed on your cards will give you a cleaner web on your cards, cleaner strips, higher lustre yarns, increased production. *It will soon pay for itself in the increased price you can get for your card fly.*

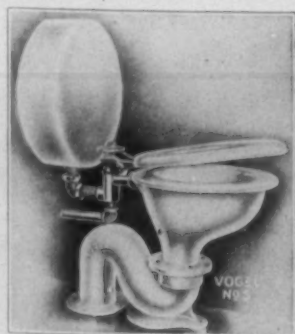
Complete Details on Request—No Obligation.

Textile Appliance Co.
Gastonia, N. C.

... Reduce Overhead and Eliminate Repair Bills with This Durable Economical Closet

VOGEL Number Five Closets are designed especially for Mills and Mill Villages.

They stand the hardest use and abuse, use less water and seldom, if ever, require repairs or adjustments. For more than 30 years **VOGEL** Factory Closets have been giving service in all parts of the country.



JOSEPH A. VOGEL COMPANY
Wilmington Delaware

WENTWORTH

Double Duty Travelers



Reg. U. S. P. O.

Hicks, American, Wilson
U. S. Standard

Manufactured only by the

NATIONAL
Ring Traveler Co.

Pawtucket, R. I.

131 W. First Street, Charlotte, N. C.

L. EVERETT TAYLOR, So. Agent

Philadelphia's Popular Hotel

"Nearest Everything"

13th and Chestnut Streets



400
Outside
Rooms
each
with bath
and
circulating ice
water

Convenient to R. R.
and Bus Stations

Moderate Rates

ADELPHIA HOTEL

Victor I. Hendricks
Manager

MANHATTAN MAKES *arteries* FOR AIRCRAFT

— arteries that do not
harden in desert heat
or stratosphere cold

BACK of throttle and pedal and instrument panel, a maze of hose made of oil- and gasoline-proof synthetic materials, leads out to wing flap and propeller blade, to rudder and landing gear, to gas line and bomb door, to vital mechanisms that must give instant response to controls.

In them flow the fluids for flying—and landing.

No simple tubing—these arteries that must and *do* stand up to rapid vibrations and extreme pulsations of pressure; to hot engine oil on the inside, sub-zero cold on the outside; to sudden and terrific alternations of stresses and temperatures.

That kind of stamina is an achievement of protracted, progressive and intense research.

But ships must land as well as fly—and then *stop*—quickly, smoothly.

For this vital need, MANHATTAN developed light, high-friction asbestos brake linings for all types of ships from light pursuit to giant bombers and airliners.



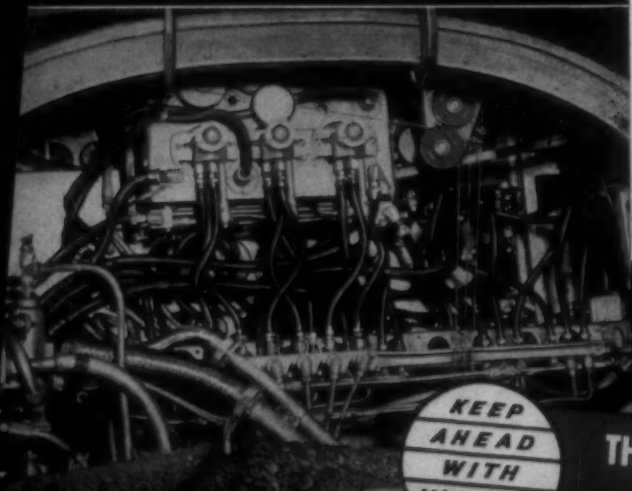
Many other highly specialized developments in natural and synthetic rubber are imperative to the aviation needs of the Defense Program, to which MANHATTAN'S resources, manpower and fifty years' experience are dedicated.

MANHATTAN PRODUCTS

for the Aviation Industry include:

Hose for Fuel and Oil Lines and Hydraulic Controls	Hydraulic Packings
Brake Linings	Vibration Dampeners
Clutch Facings for Accessories	Molded Parts and Gaskets
Air, Welding & Paint Spray Hose	Radio Shielding Tubing
Brake Cylinder Cups	Abrasive Wheels
	Non-slip Matting
	Transmission Belts
	Conveyor Belts

Behind the instrument panel—Hose developed by Manhattan and The Weatherhead Company engineers assures instantaneous response to hydraulic controls.



THE MANHATTAN RUBBER MANUFACTURING DIVISION
of RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES and FACTORIES • • • PASSAIC, NEW JERSEY